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Arabic Logic

Ibn al-Tayyib's Commentary on Porphyry's *Eisagoge*

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Arabic Logic

Ibn al-Tayyib's Commentary on Porphyry's *Eisagoge*

by
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Dedicated to the memory of my father and mother

Contents

Preface

This is a translation and a study of Ibn al-Tayyib's commentary* on the *Eisagoge* of Porphyry. The study takes into account the "Eisagoge" (*al-Madkhal*) of Avicenna (Ibn Sina), a contemporary of Ibn al-Tayyib. Avicenna's work is, strictly speaking, not a commentary in the sense in which Ibn al-Tayyib's is. That is to say, he, unlike Ibn al-Tayyib, does not quote verbatim a passage from Porphyry's work and comment upon it. His "Eisagoge" is rather a restatement or paraphrase of the subject matter of Porphyry in his own way and with his own views on it. The views of the eminent philosopher, al-Farabi, have, where relevant, also been mentioned. Ibn al-Tayyib's own commentary on the *Categories* (as yet unpublished) has been referred to in a handful of places. The study also takes into account the four extant Greek commentaries of Ammonius, Elias, Pseudo-Elias and David. Parallels between the commentaries of Ibn al-Tayyib and these Alexandrian scholars have been pointed out in the Commentary.

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MARCH 1975

*My edition of the Arabic text was published by Dar al-Mashreq (Beirut) in 1975. The translation covers the commentary proper, i.e. excluding Ibn al-Tayyib's own introduction (paragraphs 1-88 of the Arabic text.). Paragraphs 1-347 of the translation thus corresponds to paragraphs 89-437 of the Arabic text.

Introduction

Logic in Medieval Islam

It has long been recognized by historians of logic that the medieval Muslim philosophers and philosophical theologians (*Mutakallimun*: rendered variously as rationalist theologians, dialectical theologians, the "scholastics" of Islam) made some interesting contributions to the history of logic. When the Greek logical works were handed to the Muslim scholars in translation in and after the 9th century A.D., they studied them thoroughly and critically and wrote commentaries upon them. Prantl, [1] the 19th-century writer on the history of logic in the West, noted that Arabic literature on logic was one of the main sources for the terminist logic (i.e., the logic of terms) of the medieval Western logiciansa view upheld by 20th-century scholars on medieval philosophy.[2] William and Martha Kneale[3] and David Knowles[4] have also noted the origin in Avicenna (Ibn Sina, d. A.D. 1037) of the doctrine of *intentio*, a doctrine which was of great importance in both Arabic and medieval Western philosophical logic. The *secundae intentiones* constituted the subject matter of logic. (I have shown elsewhere, however, that in Arabic logic itself the doctrine of the "intentions" is traceable to al-Farabi, d. A.D. 950).[5] Bochenski[6] was also aware that "Arabian logicians certainly exercised some influence" on medieval scholastic logic.

However, for a complete knowledge of the contributions to logic made by the Muslim philosophers we have to wait until a great number of the logical works in Arabic have been edited and studied. But we know so far that modal logic, the branch of logic which deals with the concepts of possibility and necessity, because of its relevance to the problem of determinism and divine foreknowledge, was of great concern to them; that the relationship between logic and grammar interested them; that conditional syllogisms, the problem of uni-

versals, the analysis of the concepts of existence and predication, the theory of categorical propositions were some of the logical or logico-philosophical questions which the Muslim philosophers treated in interesting ways.

Logic was a subject that held some attraction for Muslim philosophers and philosophical theologians. The latter, in particular, regarded it as an organon, a tool (*ala*), which would provide their religious doctrines with impregnable fortifications against the onslaughts of unorthodox thinkers. Thus the Ash'arites, orthodox philosophical theologians, equipped themselves with the tools of Greek logic in their opposition to the Mu'tazilite rationalism. So, in spite of the fact that al-Ash'ari wrote a treatise entitled "Against the people of Logic" his polemic must have been directed not so much against logic as such but against the "people of logic," that is, the Christians, as Rescher pointed out. [7] As a matter of fact the attention that the Ash'arites and other philosophical theologians paid to logic was on all fours with their intentions and attempts to make the religious doctrines of the Qur'an internally coherent and intellectually respectable. Theology, after all, is nothing more than *logical* demonstration of religious truth or belief. Consequently Muslim scholars soon found that logic, as a study of the general principles of reasoning, was valuable in technical controversy. To be able intelligently and successfully to enter into a debate over the divine attributes, for instance, the theologian should have a precise idea of the notions of existence and predication in order to be able to explain the relation of the predicate "good" to God in the statement "God is good." Moreover, a knowledge of the principles and methods of reasoning would help the theologian in detecting the falsehoods and inconsistencies in the arguments of their opponents.

The attraction that logic held for the philosophical theologians may also have resulted from their own conception of the subject, a conception articulated by Ibn Taimiyya (d. A.D. 1328) in his book *Kitab al-radd 'ala al-Mantiqiyyin* ("The Refutation of the Logicians").[8] Ibn Taimiyya maintained that logic cannot reveal the nature of reality (*haqiqa*); it is theology or metaphysics which can do that. Logic concerns itself rather with the relationships between statements. It is because of

the *formal* character of logic that Ibn Taimiyya regarded it as a useless pursuit. [9] If logic would modestly confine itself to providing principles of formal implication or consequence and would refrain from making pretentious excursions into the realm of realities (*haqa'iq*) which can be attained only by spiritual contemplation and metaphysical insight, then its role in the acquisition of ordinary knowledge could be appreciated and valued. In this connection, the statement by Ibn Taimiyya, *man tamantaqa tazandaqa*: "he who does logic courts heresy,"[10] can only be taken as referring to those who held that logic could pontificate on reality and could adjudicate upon the truth or falsity of premises of arguments. It is quite likely that some of the orthodox thinkers, particularly the narrow-minded ones among them, who were hostile to logic may have held such a conception of logic; that is, they may have attributed to logic claims that it could not properly have.

But since the Muslim philosophical theologians obviously knew which side of their bread was buttered, it was only certain of the logical theories that were preferred, appropriated and developed by them. Thus, they established their own systems of signs (*dalalat*) and analogies (*qiyasat*); "inference of the observed from the unobserved" (*al-istidlal bish-shahid 'ala 'l-gha'ib*which was the same as "transfer" = *nuqla*), the logical notions of *tard wa 'aks* ("coextensiveness and coexclusiveness"), a kind of reciprocal implication; the method of *mu 'arada*, in which one draws a contrary conclusion from a hypothetically accepted premise; the indirect syllogism (*qiyas al-khulf*), etc.[11] These logical theories were developed and articulated in the writings of the philosophical theologians. And al-Farabi in his treatise mistitled by Rescher as "*Al-Farabi's Commentary on Aristotle's Prior Analytics*,"[12]was just expounding the logic of the arguments of the philosophical theologians (*Mutakallimun*). It is thus crystal clear that Muslim theologians were generally not against logic as a rational system relevant and valuable in arguments.

Now let us turn to what al-Ghazali (d. A.D. 1111), another philosophical theologian, and some of the philosophers said about the nature of logic. Al-Ghazali wrote:

A. As for the usefulness of logic it is clear that the

> unknown (*majhul*) cannot be determined except by the known (*ma'lum*) . . . Logic provides the canons by which we distinguish (*tamyiz*) the true (*sahih*) from the false (*fasid*), and thus certain knowledge from that which is not certain. It is like a scale (*mizan*) and standard measure (*mi'yar*) for all the sciences (*al-'ulum*). Neither the superiority (*rujhan*)nor the inferiority (*nuqsan*), neither the gain (*ribh*) nor loss (*khusran*) of anything can be known unless that thing has been weighed by means of the scale. 13

Al-Farabi also wrote:

B(i). The art of logic is an instrument by which, when it is employed in the several parts of philosophy, certain knowledge is obtained of all that the several theoretical and practical arts include; there is no way to certainty of the truth in anything of which knowledge is sought save the art of logic. . . . This art, since it gives rules to the rational faculty (*al-quwwa al-natiqa*) for the interior speech which is the concepts or propositions (*ma'qulat*), and rules shared in common by all languages for the exterior speech which is the expressions, and directs the rational faculty in both matters at once towards what is right (*sawab*) and protects it from error (*ghalat*) in both of them together, is called *logic (mantiq)*.14

Again:

B(ii). Logic provides all the rules whose business it is to set the intellect straight and to direct man toward what is correct (*sawab*) and what is true (*haqq*) regarding any of the propositions with respect to which man may possibly err; the rules that can preserve and protect him from errors and mistakes regarding the propositions; and the rules for checking on the propositions with respect to which one cannot be certain that someone did not err in the past. For the propositions are things

> about which it is not possible at all to err, as they are those things which man finds by himself as if they are naturally (intuitively) known to be certain. As examples: the whole is greater than its part; every three is an odd number. 15

Avicenna (Ibn Sina) also wrote:

> C(i). The subject matter of Logic, as you know, consists in the second intelligible intentions (or, concepts: *ma'qulat*) which are dependent upon the first intelligible intentions with regard to the manner by which to arrive from the known to the unknown.16

Again:

> C(ii). Logic is an instrument (*ala*) which protects (*alasimah*) the intellect from error (*khata'*) regarding that which we conceive and give assent to; and it is that which leads to true belief by giving the reasons (*asbab*) and methods (*nahj*) of arriving at it.17

And, finally, Ibn al-Tayyib also wrote:

> D. The aim of the art of logic is demonstration (*burhan*: proof).18

It may be concluded from these statements on the nature of logic that the Muslim philosophers held that logic concerns itself with the methods and principles used to distinguish correct from incorrect reasoning; that it deals with the relationships between statementsthus, that it is a theory of inference; and that its business is the pursuit of truth. Logic concerns itself with concepts and propositions. Muslim philosophers in general maintained that logic cannot properly concern itself with ontological questions; it was a view of "logic without ontology." Thus, Ibn al-Tayyib says that the problem of universalswhich he regards as an aspect of the ontological problemcannot properly be dealt with in the *Eisagoge*, a book on logic (see para. 57). They held firmly to the *formal* character of logic. A Muslim astrologer Abi Sa 'id al-Sirafi likens logic to a balance that can tell which thing is weightier but can never

tell whether the thing being weighed is gold, copper or iron. [19] That is to say, logic deals with the truth or validity of arguments but not with the truth or certainty of the statements constituting a particular argument.

The relation between logic and grammar was a problem that the Muslim philosophical logicians and theologians grappled with, a problem that is alive among modern philosophers and logicians. The problem is: what precisely is the relationship between the grammatical rules of a language and logical laws? Do logical laws derive from language rules or are they independent of the particular language in which they are formulated?

In medieval Islam this problem was articulated in a celebrated debate between the logician Abu Bishr Matta Ibn Yunus (d. A.D. 940) and the philosophical theologian and philologist Abu Sa 'id al-Sirafi (d A.D. 979). Al-Sirafi's position is that of the linguistic-conventionalist: logic does not transcend language but merely reflects a particular set of linguistic conventions and grammatical rules; logic is the formal grammar of a language or the formal articulation of its structure as this functions in the actual use of the language. Matta, wanting to establish the nonconventional and language-neutral character of logic, seeks to dissociate it from language and tries to characterize logic as the art of reasoninga characterization which al-Sirafi denies, because, according to him, "logic" derives from the Greek *logos* which, despite its equivocal character, he would render as "speech," just as the Arabic *nutq* from which we get *mantiq* ("logic") also means "speech," "utterance."[20]

Al-Farabi also maintained the nonconventional character and the language-neutrality of logic, for his statement immediately following that quoted above (B(i) was: "Grammar shares in it (i.e., logic) to some extent and differs from it also, because grammar gives rules only for the expressions which are peculiar to a particular nation and to the people who use the language, whereas logic gives rules for the expressions which are common to all languages."[21]

It seems to me that the problem of the relation between logic and grammar originated with the Muslim thinkers them-

selves. The Stoics had held that logic included the study of language,[22] "wherein are included written language and the parts of speech, with a discussion of errors in syntax and in single words, poetical diction, verbal ambiguities, euphony and music, and according to some writers chapters on terms, divisions and style."[23] But the view of the Stoics that logic includes linguistics, or, what amounts to the same thing, that linguistics is part of logic, cannot be taken to imply that logical rules are dependent (or, independent) of linguistic structures. Nor is there any record of the Stoics having discussed the problem, that is, of the relation between logic and grammar.

Porphyry's Eisagoge: Its Subject Matter

Porphyry's *Eisagoge*, composed about A.D. 270,[24] was as much influential in Islamic, as it was in medieval Latin scholastic logic. In Islamic logic, as in the Alexandrian and Syriac before it, it was put at the head of the Aristotelian organon.[25] Although Porphyry wrote the *Eisagoge* as an introduction to the *Categories* only, yet he must have regarded it as an introduction to the whole logic of Aristotle, since the *Categories* itself was, prior to the work of Porphyry, supposed to be isagogic to the logic of Aristotle. And Ammonius was right when he said: "The Book is useful to the whole of philosophy . . . for, if it is an introduction to the Aristotelian *Categories* which is about incomplex terms, these being the starting points of logic, it is clear that it (i.e., the *Eisagoge*) is prior in terms of the order of logic."[26]

The importance of Porphyry's *Eisagoge* has usually been associated with the famous philosophical *problem of universals*, a problem that is much discussed in courses in philosophy of logic, metaphysics and epistemology. The statement in the *Eisagoge* which gave rise to the controversy over universals in the Middle Ages was:

> Therefore, I shall refrain from discussing genera and species whether they exist or are placed in mere unrestricted imaginations, and if they exist, whether they are corporeal or incorporeal and whether they

are separate or perceptible in objects. (See paragraphs 52, 56 & 57, Porphyry's section)

It was this statement which divided Western philosophers into realists, conceptualists and nominalists, when Porphyry's text reached them in the Latin translation made by Boethius (470-524). [27]

However, there are other aspects of the *Eisagoge* which are of some logico-philosophical interest and relevance. Porphyry discusses at length the Aristotelian doctrine of the predicableswhich (predicables) are definition, genus, proprium ("property") and accident. The predicables, or heads of predicables, are ways in which terms occur in the predicate of general propositions; they represent the different relations in which a predicate might stand to a subject in a general proposition. According to Aristotle, the predicate in a general proposition must be either a definition, genus, proprium or an accident. Aristotle in his doctrine was thinking of a proposition whose subject was a general term, i.e., a concept or species. As examples:

(a) A triangle is a plane figure bounded by three straight lines. (In this proposition the predicate is a *definition*).

(b) A triangle is a plane figure. (In this proposition the predicate is a *genus*)

(c) A triangle has two right angles as sum of its interior angles. (In this proposition the predicate is a *proprium*)

(d) Some triangle is three inches on one side. (In this proposition the predicate is an *accident*).

Thus, the doctrine makes a distinction between essential (necessary) predication (props. *a-c*), in which the predicate is conceptually connected with the subject, and accidental (contingent) predication (prop. *d*) in which there is no conceptual connection between the subject and the predicate. In Kantian terms the distinction is between analytic and synthetic. An analytic proposition has a species or concept (i.e., a general term) as subject, never a singular term. Thus, "a bachelor is an unmarried man" is an analytic proposition,

whereas "Kofi is a bachelor" (or, unmarried man) is not. The question as to the validity of the distinction between essence and accident (or, what is the same thing, between necessary and contingent attribute) is being discussed today in philosophy of logic and metaphysics. The problem of the predicables has a special bearing on key issues in the philosophical approaches to language and semantics.

The *Eisagoge* discusses the question as to whether Existence is a genus, a question which may be related to the question as to whether Existence is a predicate (see next section vi).

Finally, the *Eisagoge* adumbrates the principle of the identity of indiscernibles (see next section vii).

Some Points of Philosophical or Logical Interest in this Book

(i) On the notion of substance, Ibn al-Tayyib makes a point which is perhaps only implicit in Aristotle's concept of first substance (i.e., the concrete individual), namely, that when we say that substance is ontologically independent we do not imply that it is "devoid of an accident. But we say that substance does not need accident inasmuch as it is possible for the assigned accident to withdraw from substance while the latter remains, (para. 150). In other words, it is to the extent that accidental predicates are not conceptually bound up with the metaphysical makeup of an individual substance that the latter can be said to exist independently of the accidental categories, not that the individual substance, like horse, can exist without, for instance, being in a place or having a spatiotemporal relation, or being colored in some way. Thus, he says (para. 286) that "copper does not exist without a color."

(ii) Ibn al-Tayyib believes in the existence of abstract entities, and reasons that if *x* and *y* are both F,

then there is something, the referent of that common predicate F, which x and y have or, as he puts it, "participate" in (para. 54). But, as regards the nature of the existence of (universal) concepts, he appears an abstractionist and a conceptualist; he believes in the empirical foundation of such concepts. In explaining how the mind acquires the universal concept, he says that through sense perception the sensible forms of particulars are conveyed to the mind. When the mind becomes aware of the likenesses and the common elements in the sensible forms, it splits and classifies them. An intelligible form, a concept, is thus acquired, and it becomes a ready-made category for arranging and understanding experience (para. 3, 4, 5, 7, 51, 56 and Commentary, secs. 3, 5, and 43).

(iii) Predication. The author emphasizes that individuals are the genuine subjects of predication. Historians of logic who unjustifiably condemn Porphyry for making species a predicable (see note 1.) fail to see that Porphyry in his *Eisagoge* makes the individual a predicate. Ibn al-Tayyib, but not the Alexandrians, criticizes Porphyry for this, insisting that only concepts (or, what he calls "forms existing in the soul," *al-suwar al-maujuda fi 'l-nafs*), not individuals, can be predicates, a doctrine equally emphasized in modern logic (see para. 91, 92, 95, 96, 171-174 of text). In fact, by making the individual a predicate, Porphyry contradicted himself, for according to the Tree of Porphyry, (para. 137, 138, 177 & 178) it is higher concepts which are predicted of lower concepts without the latter reciprocating, that is, without lower concepts being predicated also of the higher, for as Ibn al-Tayyib points out, we do not say: animal is man, or man is Socrates. In the division of the genus animal, for instance, the individual Socrates would be at the bottom rung: nothing would be below it of which it would be

predicated. Hence, the individual Socrates cannot be predicated. As regards predication, Ibn al-Tayyib must be dissociated from traditional logic which allows universals or concepts as proper subjects of predication alongside individuals. He says that genuine predication makes reference to individuals (para. 91).

(iv) Ibn al-Tayyib seems to think, though not consistently, that the true differentia should be predicated in respect of essence (or "of what a thing is" = ἐν τῳτίἐστι), rather than of quality (or "what sort a thing is of": *min tariq 'ayy shay' huwa* = ἐντῳ ποίοντίἐστι). He asks: "Why does Porphyry allow that the differentia is predicated in respect of what sort a thing is of in spite of his knowledge that Aristotle held that definitions are predicated of the definienda in respect of what the things are, and the definition is composed of the genus and the differentia? How is it possible that the totality of the definition is predicated in respect of what a thing is, while its part is predicated in respect of what sort a thing is of?" (para. 225). This question, I think, is an interesting one.

(v) His examination of Porphyry's definition of the genus and the species leads him to criticize Porphyry for defining the unknown by the unknown, the implication being that terms should be defined by other terms presumed to be known (para. 105, 108, Commentary, sec. 66).

(vi) The author's arguments to show that Existence (or Being) is not a genus are also interesting. Briefly stated his arguments are:

(a) Existence has no species, for substance and accident are not species of Existence because man, for instance, participates in both substance and accident, but this would not be so if they (substance and accident)

were separate species. That is, if substance and accident were separate species it would be impossible for the individual man to participate in both, the assumption being that an individual belongs ultimately to one species only.

(b) Existence has no differentiae, and hence cannot function as the genus animal, for instance, which possesses the differentiae of mortal, rational, etc., in potentiality. Hence, Existence is not a genus.

(c) Substance and accident are on different levels of reality, "for substances are more real (*ahaqq*) than accidents . . . and accident is less important than substance because the former requires the latter in order to exist, while substance does not require accident" (in order to exist). This concept of gradational ontology makes it impossible for things that participate in Existence to do so *equally*, whereas man and horse do *equally* participate in animal which is their genus. Hence, Existence is not a genus.

(d) If Existence were a genus for two species that participate in it, the disappearance of one would be involved in the disappearance of the other, just as if the genus animal were to disappear, the consequent disappearance of the species man would necessarily involve the disappearance of the species ass. But in the case of Existence, the species ass would still exist even if the species man were destroyed. Hence, Existence is not a genus. (See para. 148-154 and Commentary, sec. 85).

(vii). Porphyry had defined the individual as that which is constituted by a unique set or collection of

attributes *not* repeatable in *all* respects in any other individual (para. 175-176, 180). *This surely is an earlier statement of the principle of the Identity of Indiscernibles*the principle which states that no two individuals share the same set of qualitiessupposed to have originated from Leibniz. While endorsing this characterization of the individual, Ibn al-Tayyib says that the things that constitute the individual are "substances, propria and accidents" (para. 176 and 180). However, it is certain that by "substances" he means substantial (essential) attributes, for he says that from Porphyry's statement regarding the constitution of the individual "you must understand that he means the substantial, particular (peculiar) and accidental propria of things" (para. 180). Thus, Porphyry and Ibn al-Tayyib are maintaining what is known in modern history of philosophy as the bundle-theory of substance: an individual is a bundle or collection of qualities. 28

(viii) I have argued that the charge by historians of logic that Porphyry made a muddle of Aristotle's doctrine of predicables by including species (εἶδος) is not legitimate and that Aristotle surely means species to be a predicable where the subjects are individualsand individuals, for Aristotle, are the paradigm cases of logical subjects. Thus, by adding species to the list of predicables, Porphyry does not misinterpret Aristotle.

Greek Commentaries on the Eisagoge

Long before the *Eisagoge* reached the Muslim scholars, commentaries had been made upon it by Greek-Alexandrian and Syriac philosophers, and we would like to make mention of them in view of the fact that the Arabic commentaries often

take into account the views of these philosophers, particularly the Greek-Alexandrian.

A. *Ammonius, son of Hermias* (c. 450-c. 520) was a professor of philosophy at Alexandria. Simplicius, John Philoponus and Olympiodorus were among his students. He wrote a commentary on the *Eisagoge*, which has survived and was edited in 1891 by A. Busse in the *Berlin Commentaria in Aristotelem Graeca* (vol. 4, pt. 3).

B. *John Philoponus* (c. 480-c. 540) was a student of Ammonius in Alexandria. We know from some sources [29] that he wrote a commentary on the *Eisagoge*. No such commentary, however, exists. A Syriac version of his commentary is mentioned by Khalil Georr.[30]

C. Olympiodorus (c. 500-c. 570) was also a student of Ammonius in Alexandria, and occupied the chair of philosophy after Ammonius' successor Eutocius; the latter occupied the chair only for a short period. He wrote a commentary on the *Eisagoge*.[31] This commentary is lost. It was, however, the common source of Elias and David.

D. *Elias* (c. 520-c. 580) succeeded Olympiodorus in the chair of philosophy in Alexandria. He wrote a commentary on the *Eisagoge* which has survived and was edited by A. Busse in the *Berlin Commentaria Graeca* (vol. 18, pt. 1)[32]

E. Pseudo-Elias, *Lectures on Porphyry's Isagoge.*,[33] ed. L.G. Westerink (Amsterdam, 1967).

F. *David* (d. c. 600) succeeded Elias in the Alexandrian chair of philosophy. He wrote a commentary on the *Eisagoge*. This has survived, and was edited by A. Busse in the *Berlin Commentaria Graeca*, (vol. 18, pt. 2).

G. *Stephanus of Alexandria* (flourished in the first half of the seventh century). He belonged to the school of Olympiodorus, and was the last to occupy the Alexandrian chair of philosophy. The appointment of Stephanus by Heraclius (regnabat 610-641) as οἰκουμένικοςδιδασκαλός[34] ("a State or Imperial Professor") meant the transference of the Alexandrian school to Constantinople. The date of his call to Constantinople is given as 618.[35] One source[36] says that Stephanus wrote a commentary on the *Eisagoge* based on

the commentary of John Philoponus. No such commentary, however, has survived.

The next question that must be resolved is this: which of these Greek commentaries on the *Eisagoge* were translated into Arabic? None of them is recorded by Moritz Steinschneider [37] to have been translated into Syriac or Arabic. From different sources, however, we learn that the commentary of John Philoponus was translated into Syriac and most probably also into Arabic,[38] and that it was recognized by the Monophysites as a textbook.[39] The commentary of Ammonius is said to have been used by the Syriac scholar Athanasius of Baladh,[40] and the latter's translation was used by the Arabic translator, Abu 'Uthman al-Dimashqi.[41] "L'Isagoge est étudiée à l'aide des commentaries grecs dépendant d'Ammonius."[42] The commentary of Elias was translated from the Syriac into Arabic by Ibn Suwar (al-Khammar).[43]

However, what about cases where Arabic writers quote ormore frequentlymake references to the views of Greek authors whose works are not mentioned in the catalogue of translations? It is hard not to think, for instance, that Ibn al-Tayyib in his various definitions of the "indivisible" uses the commentary of David (see para. 103 of text and my Commentary, sec. 62). But he makes no mention of this source, nor is David's commentary known to have been translated into Syriac or Arabic. The question is: was he or was he not aware of this source? Suppose he was, would it not follow that the source was also translated but that, for some reason or other, it escaped the records of the historian or the bibliographer? Since it is known that the Muslim philosophers did not know Greek so as to have been able to utilize the original Greek sources directlyand, hence, they must have depended solely on translationshow else can we explain quotations or references to Greek authors whose works are not listed in the catalogue of translations from the Greek? A plausible explanation, then, would be this: either the Greek works that are not recorded to have been translated were actually translated but were not recorded, or the views in the untranslated works were incorporated (or referred to) in some other works that were translated into Arabic.

Syriac Translations of and Commentaries on the Eisagoge

Between the fifth and seventh Centuries the *Eisagoge* of Porphyry was translated into Syriac at least three times. [44] The Syriac scholars, like, the Alexandrian, placed the *Eisagoge* at the head of the Organon of Aristotle.[45] The following are the Syriac scholars who translated and/or wrote commentaries on the *Eisagoge*.

A. *Hibba* (Ibas) d. 457. He flourished in the first half of the fifth century. He was the head of the school of Edessa in the third decade of this century. To him is attributed the oldest Syriac translation of the *Eisagoge*.[46]

B. Probba (Probus) d. c. 480. He was a Nestorian scholar who flourished in the second half of the fifth century in Antioch. He wrote a commentary on the *Eisagoge* based on the translation of Hibba.[47]

C. Sergius of Res'aina (d. 536). He was a Monophysite physician and scholar who studied in Alexandria and flourished in Res'aina in Mesopotamia. He was one of the greatest translators from Greek into Syriac, and in this respect was to the Monophysite what Probha had been to the Nestorians about half a century before. He translated and wrote a commentary "Sur le genre, les espèces, et l'individu, correspondant au second chapitre de l'Introduction de Porphyre."[48]

D. Athanasius of Baladh (d. 696). He was a Monophysite scholar who flourished in the second half of the seventh century. He made a Syriac translation of the *Eisagoge*. He is said to have made use of Ammonius' preface to his commentary on the *Eisagoge*.[49]

All the Arabic translations of the *Eisagoge* were based on the Syriac. The only extant Arabic translation of the *Eisagoge*, that of Abu 'Uthman al-Dimashqi,[50] was based on the Syriac translation of Athanasius.[51] Finding fault with Athanasius' translation, al-Hasan Ibn Sawar (Ibn al-Khammar) used another Syriac translation which was more accurate and which was then in the possession of Abu Bishr Matta Ibn Yunus and Yahya Ibn 'Adi.[52] The latter translated from the Syriac (probably of Athanasius) the Prolegomenon of Ammonius to

the study of the *Eisagoge* [53]; he also criticized Abu 'Uthman's translation.[54] Al-Ahwani was right in saying that a final judgment could be made on Ibn Sawar's criticism of the translation of Athanasius only after comparing it with the Greek original.[55] However, in the absence of the Syriac translation, and on the assumption that Abu 'Uthman's translation was a faithful representation of Athanasius', it would not be out of place to compare Abu 'Uthman's translation with the original Greek. We have made this comparison in the Arabic edition of Ibn al-Tayyib's work. It has to be noted, incidentally, that Ibn al-Tayyib's commentary on the *Eisagoge* which we are studying in this work reproduces the translation of Abu 'Uthman, although there are differences in some places which we have pointed out in making the comparison. Ibn al-Tayyib apparently compared Abu 'Uthman's translation with another Syriac translation, for on Fol. 41a he makes reference to a Syriac text. Moreover, there are two sentences (in the Greek original) which are missing in Abu 'Uthman's translation but are produced in Ibn al-Tayyib's text. It seems, therefore, that Ibn al-Tayyiband this must have been a common practice among the Arabic translators and scholarsused a Syriac translation as a corrective to any mistranslations or omissions in Abu 'Uthman's translation.

Arabic Translations of and Commentaries on the Eisagoge of Porphyry before Ibn al-Tayyib

The importance which the Muslim scholars attached to the *Eisagoge* of Porphyry is evident from the large number of commentaries they made upon it. Commentaries upon it started, perhaps, with AI-Kindi's in about the middle of the 9th C., and may have continued well into the 17th C. A modern Arab scholar says that "some of the commentaries upon it continued to be studied in the Al-Azhar until today."[56] Two of the latest commentaries, those by Al-Ansari (d. 1520), and 'Alam al-Din Suleiman al-Jarbi (d. c. 1540) are in Princeton University Library.[57] Between 850 and 1550 at least about fifty scholars made commentaries on the *Eisagoge*.[58] The *Eisagoge* was placed at the beginning of Aristotle's Organon by the Muslim philosophers.

The following translations are recorded:

A. Muhammad Ibn al-Muqaffa (d. c. 200/815). He translated the *Eisagoge*. [59] But this has been doubted.[60]

B. Ayyub Ibn al-Qasim al-Raqqi (d. c. 226/840). He translated the *Eisagoge* from the Syriac.[61] This has not survived.

C. Abu 'Uthman al-Dimashqi (d. c. 308/920). He made an Arabic translation of the *Eisagoge*,[62] based on the Syriac translation of Athanasius.[63] This has survived and was edited by al-Ahwani and Badawi.[64]

The Arabic work on the *Eisagoge* before Ibn al-Tayyib (d. 1043) is as follows:[65]

A. Al-Kindi (d. 260/873), the well-known "Philosopher of the Arabs" wrote a commentary on the "five words" (the quinque voces). This has not survived.

B. Al-Sarakhsi (d. 286/899), a pupil of Al-Kindi, wrote a commentary on the *Eisagoge*. This work has not survived.

C. Muhammad Ibn Zakariyya al-Razi (d. 313/925), a renowned physician and scientist, wrote an epitome on the *Eisagoge*. This work has not survived.

D. *Abu Bishr Matta Ibn Yunus* (d. 329/940), a Nestorian Christian, trained in philosophy and medicine. He was the teacher of al-Farabi. He wrote a commentary on the *Eisagoge* which has not survived.[66]

E. *Abu Nasr al-Farabi* (*d*. 339/950), the well-known Arabic logician wrote:

(i) A paraphrase or restatement of the *Eisagoge* with additional material. This has survived, and was edited by D.M. Dunlop in *Islamic Quarterly*, vol. 3 (1956), pp. 117-138.

(ii) A commentary on the *Eisagoge* which has not survived in the Arabic, but is extant in a Hebrew translation.[67]

F. *Abu Zakariyya Yahya Ibn 'Adi* (d. 364/974). He was a Monophysite scholar. He studied medicine, theology, science, and philosophy. D and E were his teachers, while I and J (below) were among his pupils. He wrote "A number of questions relating to the book of the *Eisagoge*,"[68]which obviously must have been a commentary or an epitome. This work is lost.

G. Abu 'Abd Allah al-Khwarizmi (d. c. 380/990). The part of his *Mafatih al-'Ulum* ("Keys to the Science") 69 which deals with logic makes mention of the "quinque voces" but adds "individual" to the list.

H. *Ibn 'Abbad* (d. 385/995, studied in Rayy and in Baghdad. He was politician and a wazir of Rukn al-Daulah. He wrote an epitome on the *Eisagoge*. This work is lost.

I. Ibn Zur'a (d. 399/1008), was a Monophysite Christian. He was a physician, theologian, and philosopher. He translated scientific and philosophical works from the Syriac into Arabic. He was a student of Yahya Ibn 'Adi. He wrote a commentary on the *Eisagoge*. This work has not survived.

J. Ibn Sawar (Ibn Khammar) (d. 411/1020) was a Syrian Nestorian Christian. He studied medicine, theology, and philosophy. He was a student of Yahya Ibn 'Adi. He wrote a commentary on the *Eisagoge* which has survived (but only in parts) and was published in al-Ahwani's edition of the *Eisagoge*, pp. 95 ff.

K. *Ibn al-Haitham* (d. 431/1039), flourished in Egypt. He was a notable mathematician, astronomer, and physicist. He wrote an epitome on the *Eisagoge* which is lost.

L. The Ikhwan al-Safa' (fl. middle of the 4/10 c.). Four of the treatises constituting the "Encyclopaedia" of the Ikhwan al-Safa' deal with logic. One of these four deals with the *Eisagogoe*. This is extant.

M. *Ibn Sina (Avicenna*) (d. 429/1037). The well-known philosopher and physician, was a contemporary of Ibn al-Tayyib. His paraphrase of the *Eisagoge* (*al-Madkhal*) is part of the *Kitab al-Shifa'*, and was edited by I. Madkour, et al. (Cairo, 1952).

Of these thirteen commentators or paraphrasers of the *Eisagoge* who preceded Ibn al-Tayyib, the views of only twoAbu Bishr Matta Ibn Yunus and Yahya Ibn 'Adiare referred to in Ibn al-Tayyib's commentary. He makes no reference to his teachers Ibn Zur'a and Ibn Sawar, although he does to Yahya Ibn 'Adi, the teacher of both Ibn Zur'a and Ibn Sawar.

Abu al-Faraj 'Abd Allah Ibn al-Tayyib (c. 370/980-435/1043)

He was a noted 'Iraqi Nestorian philosopher, physician, theologian, and canon lawyer who flourished in Baghdad in the first half of the eleventh century. He was a student of Ibn Sawar (Ibn al-Khammar) and of Ibn Zur'a, and the teacher of Ibn Butlan.

From al-Qifti [70] we have the following account of him: That he was well versed in the philosophical and logical doctrines of the "ancients," i.e., the Greeks, as well as in the medical works of Galen, that he revived what was lost of the Greek sciences and clarified the obscurities in them, and that Ibn Butlan, a student of Ibn al-Tayyib, reported that he (Ibn al-Tayyib) spent twenty years on the interpretation of Aristotle's *Metaphysics* and fell so ill in meditating on it that he nearly died (*kada yalfizu nafsahu)*.

From Ibn 'Usaibi'a[71] we have the following account: That he was a scholar with broad erudition (*wasi' al-'ilm*), that he wrote commentaries on the works of Galen, Hippocrates, and on the entire Organon, and that Avicenna, his contemporary, highly rated his proficiency in the medical sciences, although he underrated his philosophical acumen.

With the exception of his commentaries on the *Eisagoge* and the *Categories*, all his commentaries on the other parts of the Organon are lost. However, epitomes of virtually all of these commentaries may be extant.[72]

That Ibn al-Tayyib wrote a commentary on Porphyry's *Eisagoge* was mentioned by Ibn 'Usaibi'a.[73]

The Manuscripts

A. (1) The MS. of Ibn al-Tayyib's commentary (now Bodleian Marsh 28) had found its way into the Bodleian Library, and had wrongly been ascribed to al-Farabi by the Uris Catalogue (No. 457). In 1951 Professor D.M. Dunlop published an English translation of the first part of the text with the title: "The existence and definition of philosophy, from an Arabic text ascribed to al-Farabi," *Iraq* 13, no. 2, 1951, pp. 76 ff. In 1957 the late Dr. S.M. Stern of Oxford established, beyond

doubt, that the author of the MS. was Ibn al-Tayyib, and not al-Farabi. [74]

(11) There are two MSS., one in the British Museum (Or, 1561, fols, 143r-158r) and the other in the India Office Library in London (Or. 3832, fols. 252r261r). The title pages of both MSS. are missing, and there are no colophons. Hence, there are no indications of authorship. However, close comparisons between these two MSS. and Marsh 28 do reveal that the former MSS. are certainly abbreviated versions of the latter, as was pointed out by Dr. Stern. However, as abbreviations, they were not of much use in the edition of the text, and there was in fact only on one occasion that a word omitted in Marsh 28 was supplied by the British Museum MS.

(111) According to Brockelmann (*GAL* 1:233) and the Derenbourg Catalogue 1: 420, this (i.e., Ibn al-Tayyib's) book was the one upon which Ibn Bajja wrote a commentary. This information is not correct. The work of al-Farabi upon which Ibn Bajja wrote a commentary was al-Farabi's paraphrase or restatement of the *Eisagoge* which was edited by D.M. Dunlop from Istanbul MS. Hamidiye 812 in the *Islamic Quarterly* (1956).[75] This fact is obvious from a comparison between MS. Hamidiye 812 and Escorial MS. 612 which contains Ibn Bajja's commentaries on the Organon.[76]

(iv) This MS. is very useful as a corrective to Abu 'Uthman al-Dimashqi's translation upon which Ibn al-Tayyib's commentary is based. Thus Richard Walzer, commenting on the editions of Abu 'Uthman's translation by al-Ahwani and Badawi, was right in saying that "both editors would have been well advised to consult the parallel version to be found in the Bodleian MS. Marsh 28 . . . instead of filling the lacunas in the Paris MS. with translations of their own."[77]

B. *Description of the MS*. (i.e., Marsh 28)

The MS. of Ibn al-Tayyib's commentary on the *Eisagoge*, a photocopy of which I obtained from the Keeper of Oriental Books and MSS. of the Bodleian Library, contains 83 folios. An English translation of the first part of the text (i.e., up to the "Fifth Lesson"), as noted before, was published by D.M. Dunlop. The commentary on the *Eisagoge* begins on Fol. 18a and ends on Fol. 83b with a colophon which reads:

*wa 'inda hadha li-naqta'u tafsil hadha al-ta'lim, wa bi-'l-jumlat*i *nakhtumu tafsir hadha al-kitab*. Hence the commentary is complete. However, there is no knowing whether the MS. was an autograph or the work of a copyist. The date of the MS. is not known. Stern mentioned that from the impression received from the handwriting, the MS. may date from the twelfth century. 78

On both margins of Fol. 44a there are the following names written in Greek: Ὀλιμπιοδορος(left margin), written after the Arabic rendering of the name of Olympiodorus which is 'Alimqiyadorus' (or 'Alimfiadorus'). The other word, on the right margin, is ἔλληνος . This is written against the name 'Alianos' which name, I think, was the Arabic rendering of the name of Elias.79 On Fol. 20b we have the name of Achilles written in Greek (Ἀχιλλεύς) on the right margin. We do not know who may have written these names in the Greek letters.

The Format of the Commentary

The author divides his commentary into two parts. The first part is what he describes *as jumla tal-ta'lim*, i.e., a general study of the lesson. In this section he quotes verbatim a sentence or a phrase from the text of Porphyry, and then gives a detailed discussion of it. This discussion includes a summary of what Porphyry says about that particular topic. The author here points out what, in his opinion, are the puzzles or objections (ἀπορίαι:*shukuk*) posed by Porphyry. He rebuts Porphyry's views by arguments. The discussion, in some places, also takes into account the views of Plato, Aristotle, the Alexandrian scholars, and two of the Arabic philosophers, Yahya Ibn 'Adi and Abu Bishr Matta Ibn Yunus.

The second part of the commentary also quotes Porphyry verbatim, the quotations being interspersed with the author's own explanatory notes. These notes begin with *yuridu*, "he (Porphyry) means." Since some of the quotations are not complete and meaningful (some of them are phrases) and since the flow of the passage is punctuated by the author's explana-

tory notes, I have, in the translation, put three dots at the end of a quoted incomplete sentence or phrase and at the beginning of the next quotation. The dots indicate that the two quoted passages, separated by the author's explanatory notes, are actually one complete sentence. In some places there is the expression *la ta'liq lahu* after a quotation from Porphyry. This means that he has no explanatory note on that quoted sentence; he assumes it is clear enough. After the quotation from Porphyry and the explanatory notes, the author then writes his commentary. In this commentary he explains sentences, phrases, and words. Sometimes he repeats an objection which he had already raised in *the jumla tal-ta'lim*, and adds "as we said before." This second part of the commentary the author calls *tafsil al-ta'lim*, an elaborate or detailed statement on the lesson.

Its Relation to the Alexandrian Commentaries

Ibn al-Tayyib's commentary, therefore, judging from its format, is of the kind that is usually called Great or Long Commentary, although this label is generally used for the commentaries of Averroes. The format itself was Alexandrian, the *jumla tal-ta'lim* corresponding to the ἡθεωρία and the *tafsil al-ta'lim* to the ἡπρᾶξις of the Alexandrian commentators. In ἡθεωρία the Alexandrian commentators also took into account the views of their predecessors, including Plato and Aristotle.

A detailed study of the extant Greek commentaries on the *Eisagoge*, i.e., those of Ammonius, Elias, Pseudo-Elias and David, reveals some parallels between these commentaries and Ibn al-Tayyib's commentary. This fact, which is demonstrated in our notes, could hardly fail to give one the impression that Ibn al-Tayyib's commentary may have depended, to some extent at least, on the Greek. Yet we would dissociate ourselves from the supposition that his commentary merely reechoes the ideas contained in the Greek Commentaries, for he surely presents some interesting ideas of his own which, be it noted, do not exist in the extant Greek commentaries.

For instance, he does criticize Porphyry (as the Alexandrians do not) for making the individual a predicate, for only concepts, he says, can be predicates. Secondly, "why is the true differentia not to be predicated in the category of essence?" is an interesting question he asks which is absent from the extant Greek commentaries. Thirdly, his elaborate arguments to demonstrate that Existence is not a genus do not exist in the extant Greek commentaries, etc. Nor would it be plausible to say that the ideas considered original to Ibn al-Tayyib were or may have been contained in the lost Greek commentaries. The reason is that since the Greek commentaries were generally *similar* in content, such ideasif they were in fact contained in lost Greek workswould have most probably appeared in some of the extant works.

Translation

Sixth Lesson

1. *Porphyry*: Because the knowledge, Chrysaorius, of what genus, differentia, species, [1] proprium, and accident are....

2. *Commentator*: What Porphyry teaches us in this lesson are three. He explains to us, (a) the purpose of this book; (b) its use; and (c) the method of its teaching which we must follow. He says that the purpose of this book is merely to examine genus, differentia, species, proprium, and accident. For, we must know, in a nutshell, what each of these five predicables is, and the reason why they are arranged in this way.

3. We say: genus is a form[2] existing in the soul which it (soul) abstracts[3] from a multitude of existing things, the form being predicated[4] of many things differing in species in respect of what a thing is. That is, if it is asked about what each thing is, the answer would be by the genus.

4. The method by which the mind obtains this form is as follows: The first thing that man perceives consists only of individual matters, and he perceives them through the impressions of his senses. When sense perceives each one of these individuals, it conveys that form to the mind. And the attention of the human mind, as it develops, and as the impurities of the body disappear and through the succession of that form (brought) to it from the senses, is drawn to examine it (form). The first action of the mind with regard to the form is to split it (sensible form) into all the forms existing in it, namely, the essential characteristics existing in it, like animalwith respect to Socratesand rational, coldness, hotness, whiteness, and smell. Each one of them is obtained separately. In this way, the mind obtains universal natures qua essences. Then, by generalizing the sensible forms through (the exis-

tence of) that (intelligible) formabstracted from the individualsand through all that resembles this form, the mind subsumes them under a universal concept. [5] In this way, the acquisition of universal forms is effected through a single individual.

5. The acquisition of the universal form in respect of genus, species, differentia, proprium, and accident, however, is not effected through a single individual, but through at least two individuals or two species according to this way, namely, that when the picture of two individuals like, for instance, two men, is impressed upon the mind and the mind breaks them (i.e., the two individuals) up into the things present to them both, then if that which is common to both, insofar as they are two resembling individuals, is a basis for them, then that is species, like man.

6. When two species come to the mind and it compares them, if that which is common to both is one of the things constitutive of them, that thing is genus, like animal. If that in which they differ is one of the things that constitute them, that thing is a differentia, like rational; if it is extrinsic, then either that it belongs to one speciesin which case it would be a proprium like risible, or that it cuts across more than one speciesin which case it would be accident, like white and black. The reason why the genus is more general than the differentia is because it resembles matter,[6] and matter is more general than form; and (also) because it is in the nature of genus to be inscribed in many differentiae. When one differentia occurs with a genus, the latter produces a species.

7. Differentia is a form existing in the soul which the soul abstracts from likenesses existing in objects; it is predicated of many things differing in species in respect of what sort a thing is of.

8. Species is a form existing in the soul and predicated of many things that are individually different, in respect of what a thing is;[7] i.e., if it is asked concerning each individual what substratum[8] it subsists in, the answer would be by the species, because just as the genus is the substratum for the species, so the species is the substratum for the individual. So, you must know that the species proximately comprehends the

individuals, i.e., there is no intermediary between the species and the individuals. This description applies only to the infimae species, to the exclusion of the subalterns. [9]

9. Proprium is a form existing in the soul which is predicated of its species and the multitude under the species in respect of what sort a thing is of. That is, if it is asked about what sort a thing is of, the answer would be by the proprium. The difference between the substantial differentia and the proprium is that proprium is extrinsic, while differentia is intrinsic.

10. Accident is a form existing in the soul which is predicated of many things differing in species in respect of what sort a thing is of. The difference between it and differentia is that differentia is constitutive, while accident is not. And the difference between accident and proprium is that proprium attends the form of the thing; it is peculiar to the thing and inherent in it, while accident is not like that.

11. Let us now begin our investigation of the arrangement[10] of the predicables. We say: genus, differentia, and species are prior to proprium and accident because they are substantialand things substantial to something belong to it primarilywhile proprium and accident are not substantial. Genus and differentia are prior to the species because both of them are the simple things of which the species is constitutedand the simple is by nature prior to the composite. Of the two (i.e., genus and differentia) the genus is prior to differentia because it is the substratumand the substratum is always prior to the form.[11] As for proprium it is prior to accident because it resembles the substantial differentia and it is attendant to it, for the proprium is inherent in one thing (i.e., species) alone, and the thing may be signified by it when a description (of the thing) is given. We must realize that genus and differentia are prior to species, qua essences, not qua universals, since, qua universals, they are posterior to species. For animal, qua essence, is prior to man because it is simple, but, qua universal, it is posterior to it (i.e., man). For animal is a universal which comprehends many species. Thus the species must first be before the general (concept) comprehends them. Species then, are prior to genera; and, in general, if you consider universal matters as essences, that which is above is

prior to that which is below by nature. And if you consider them as universals that which is below is prior by nature to that which is above. [12] We have, thus, informed ourselves briefly about what each one of the five predicables is.

12. The usefulness of the *Eisagoge* can be shown by three arguments. The first argument is as follows: It is evidently clear that the need for our discourses with one another is very necessary. Aristotle has already made it clear in the *Topics* that all the propositions which are discussed among people are four. The first is that whose predicate is genus; the second is that whose predicate is definition; the third is that whose predicate is proprium; and the fourth is that whose predicate is accident.[13] Thus in our discourses we require knowledge of the genus, differentia, species, proprium, and accident. This is first argument which Porphyry did not state.

13. The second argument is that the knowledge of the dialectical methods,[14] namely, division, definition, demonstration, and analysis,[15] is useful for our attaining the truth and also that which is relative to the good. There is no way of knowing these dialectical methods except through the knowledge of the five predicables. Thus, our knowledge of the five predicables is very useful, and so we must know how useful they are in each one of these (dialectical methods). But before we do that, we must know what each one of these is.

14. We say: division is the multiplication of that which is one, like the multiplication of animal by rational and irrational, and mortal and immortal. Definition is the collection of many things into one, like the collection of individual men into the definition of their species. Demonstration is knowledge of things, which knowledge is looked for by means of a cause,[16] like the knowledge of the fact that man is an animal by means of rational. As regards analysis it is the reduction of something into its elements, such as our analysis of an individual man into his elements, proximate and remote, I mean, into his organic members like the hand and the foot; and the organic members into their similar parts such as flesh and bone; and the similar parts into the four humors (of the human body), like blood, phlegm, yellow bile, and black bile; and these four (humors) into the four elements: fire, air, water,

and earth. Since we have already informed ourselves of what each of these (four dialectical methods) [17] is, let us mention the use of the five predicables for each of these.

15. We say: division begins with a genus which is divided by opposite differentiae into species. The differentiae by which the genus is divided are either essential or accidental. In division, then, we are compelled to make use of these five predicables. Again, the dividend may be a substance or an accident.

16. The use of the predicables in definition can be shown as follows: the definition pertains to a species, and it is composed of a genus and a differentia. Thus, we are forced, in definition, to know the genus, differentia, and the species. But often we lack the definition, and then we signify something by a description which is made up only of the propria of the thing and its accidents. Thus we need knowledge of propria and accidents.

17. The use of the predicables in demonstration is that the means of demonstration and, in general, of reasoning, cannot but be a genus, or differentia, or species, or a proprium or an accident. So, in demonstration and, in general, in reasoning, we need these five predicables.[18]

18. With regard to the use of the predicables in analysis, it is because the analyst takes the whole of something which he wants to explain by analysis. He breaks it up into (a) essential parts, namely those of which the essence of the analyzed thing is composed, and these are its species, genus, and differentia. Or (b), accidental parts and these are its propria and accidents. You must know that the analysis of natural objects terminates in matter and form, and in logical matters it terminates in the genus and differentia. This is the second argument (i.e., for the usefulness of the *Eisagoge*).

19. The third argument: we know already that we only become satisfied when we have knowledge of demonstration. Demonstration is effected only with an understanding of the subject matter of the *Categories*,[19] the understanding of which is (*in turn*) effected only with the knowledge of these five predicables. We make much use, then, of the knowledge of these five predicables in becoming happy. As for their use in the *Categories* it is because each of the categories is a genus,

such as substance, and it is divided by such differentia as rational and irrational into species like man and not-man. Propria particularize man insofar as he is capable of receiving contraries. I mean, that he is healthy and becomes sick or that he is hot and becomes cold. He is subject to accidents such as blackness and whiteness. Thus the usefulness of the *Eisagoge* is clear.

20. The method which we follow regarding its instruction about these five predicables is an intermediate method which can be described neither as difficult nor easy. You must know that the difficulty is of two kinds: difficulty (a) of meanings and, (b) of words. With regard to (a) it is because meanings are continuously the same and cannot be changed, since we are not able to alter the acts of nature, whereas we can alter and change words. Since we ourselves created and laid them down, it is possible for us to change them in whatever way we want. [20]

21. These are like the sayings of Homer, Plato, and Pythagoras. The Pythagoreans maintain that the soul is composed of harmonic numbers, because they see that the principles of things are numbers which are in a (definite) ratio.[21] Plato observed that the soul is composed of the circle of the Same and of the Other and refers the Same to the sphere of the fixed stars, and the Other to the orbits of the planets. God took a straight line and divided it by length. The meaning of this statement is that God divided things into corruptible and incorruptible.[22] John Philoponus asserted that there is no way at all of easing the difficulty in things. The easing is only possible in the short words becoming long and the incoherent becoming coherent or in the long words becoming short.

22. The difficulty of words is of three kinds: difficulty in (a) quality of the words, (b) their quantity, and (c) their position. The quantitative cause is when one speaks too long. The implication is that Galen was too verbose (and hence difficult to understand). The implication of shortness (of composition), like the shortening of the discourses of Hippocrates, is the opposite, for he often obscured the meaning due to excessive brevity. The qualitative cause is of two kinds: either because of the strangeness of the words as when we call the bottom

of the mountain the 'foot' of the mountain, or because of the equivocity of names. As to the problem of the position of words, I mean, badness of style, it is like the statement of Aristotle in the *Sophistici Elenchi* that 'Achilles killed 100 out of 70.' [23] The interpretation of this statement is that Achilles was one of the 70 who killed 100. You must measure the length and shortness in terms of the concepts not of the words, because if a concept is expressed with 90 words, it may be possible to express it with 100 words; and if another concept is expressed with 12 words, it may be possible to express it with 10 words. It is said regarding 12 that it is long, and 90 that it is short. And with this let us conclude our discussion of the generalities of this lesson and take up its details.

23. *Porphyry*: Because the knowledge, oh Chrysaorius, of what genus, differentia, species, proprium, and accidents are is very necessary both will regard to the Aristotelian doctrine of Categories. . . .

24. *Commentator*: The word "lianna" ("because"), in respect of its signification, is divisible into two parts which are "an" and the letter "lam" added. By the word "an" Porphyry means to confirm the statement, that is, the statement transmitted from Chrysaorius, concerning the difficulty he found in understanding the content of the *Categories* of Aristotle, and his (Chrysaorius') letter seeking advice and help towards understanding the *Categories*. He introduces the letter "lam" in order to state the cause.

25. The causes, according to the doctrine of Aristotle, are four: material, formal, efficient, and final. The material cause is a subject, like brass, to be acted on by an agent. The formal cause is the form which the maker bestows on matter and in accordance with which the brass becomes a basin. The efficient cause is that which bestows the form on the matter. The final cause is that (point) with which the maker breaks off his work. It is divided into two, proximate and remote. The proximate (final cause) is the form, and the remote is the act which issues from the form.[24]

26. The reason why the letter "lam" is added in this place is a material cause because when the soul has obtained knowl-

edge of the five predicables, it becomes ready to understand the content of the *Categories*. It could (also) be an efficient cause inasmuch as the soul is that which produces for us knowledge of the *Categories*. On the whole, the word "because" indicates the cause (reason) why the understanding of the *Categories* is difficult for Chrysaorius.

27. Knowledge is the perception of the essences of existents insofar as they are existents. Perception is the conception of the soul of the percipient of the form of the thing perceived, like the mirror taking up the form of the body opposite to it. "Essences" are spoken of in order to differentiate between what is truly known and what is known in a simple way such as a boy's knowledge of water from its accidents. He added to his word "essences" the word "existent," because that which does not exist is unknowable. The existence of anything is of two sorts: in existence, and in the mind. For everything [25] that exists has a form which the mind abstracts and perceives spiritually, and from the individual and intelligible forms the mind derives universals. And these (universals) are the subjects of demonstration: definition is connected with them, as well as division and analysis inasmuch as they (universals) are essences, and not as general or specific terms. It is said "insofar as they are existents" because knowledge may be of objects but not of what the objects are, such as from knowledge of man-as-carpenter one knows man, but not the essence of man, only man as part of man-as-carpenter.

28. The word "*ya*" (oh!) is used in three senses: (a) vocative, as, if you say, "Oh, so-and-so"; (b) (to express) admiration, as, if you say, "Oh, how deep is God's mercy!" and (c) (to express) supplication, as if you say, "Oh, Lord, have mercy on me." Porphyry intended his word, "Oh," as an address to Chrysaorius. The meaning of Chrysaorius is "golden." He was one of the seventy ministers of Rome.[26]

29. His addition of the word "what" with regard to each one of them (the predicables) teaches us that the nature of each one is different from the other. As for his statement "What it is," it teaches us that he would only discuss what the real genus is, not that which is supposed by the multitude. The word "obligatory" is used in two senses: (a) it is said of that the

employment of which is inescapable, like respiration; and (b) it is said of that whose abandonment is possible although that thing is honorable, like the respect of parents. Similarly, the word "necessary" is used in two senses: (a) it is said of that the employment of which is inescapable, such as respiration; (b) it is said of that the employment of which is inescapable in the sense of coercion, such as putting a man into prison. Here, he means that one of the kinds of "obligatory" is "necessary," and one of the kinds of "necessary" is "obligatory." As for the addition of the letter "waw" to the word "fi" ("in"), it was in order that it (i.e., what comes after mention of the *Categories*) may enter the idea of "of the necessarily obligatory." [27]

30. The dialectical methods are four, namely, division, definition, demonstration, and analysis. The order of the discussion proceeds in this way because knowledge of what genus and the remaining (predicables) are is very necessary for the four dialectical methods and for the doctrine of the *Categories* of Aristotle. This indicates that the "waw" is a conjunctive particle.[28] For if Porphyry had not meant the sense we have stated, even if he omitted the conjunction in the interest of brevityand so that we might understand it from the word to which the conjunctive particle is attachedthe "waw" here would have had no meaning and significance. As to his singling out of the *Categories* of Aristotle, it is not because these five predicables are useful only for Aristotle's *Categories* and his own (Porphyry's) *Fisagoge*, but for the *Categories* of other scholars, the books of Plato, Pythagoras, Theophrastus, Galen, and others, but because Chrysaorius had written only to complain of the difficulty of the *Categories* of Aristotle alone. He specified the use of the knowledge of these predicables with reference to the difficulty which Chrysaorius complained to him, although they (predicables) are useful for other books (of the *Organon)*.

31. *Porphyry*: . . . And because this investigation is useful also for providing definitions and, in general, the methods of division and demonstration.

32. *Commentator*: His word "because" is used, as before, in setting forth the reason for teaching these five predicables, except that the former relates to "necessity," while the latter

relates to "usefulness." And the word "also" makes the four dialectical methods linked to the *Categories*. Thus, the interpretation of the statement is as follows: because this investigation is useful for the *Categories* and also for providing the dialectical methods. Thus, the acquisition of the knowledge of the five predicables is necessary and useful for the *Categories* and for the four dialectical methods.

33. However, he said that knowledge of the predicables is necessary and useful in logic, due to what I am describing, namely, that that which is truly sought for is happiness, and it is inevitable that happiness be attained either through a medium or not. If it is attained through a medium, this medium must be necessary or unnecessary. If it is necessary, it is called necessary and useful, like the fact that it is impossible for one to be like God Almighty except by subduing the appetites and making the rational part (of a man) dominant. And if it is unnecessary, it is called unnecessary but useful, like expelling the humors existing in the bodyfor this can be effected by a means which consists in the opening of a vein and the taking of drugs and so on. Each of these is unnecessary but useful, because the end result is useful. We have here something necessary and useful and opposite to it there is something unnecessary and useless like a man's killing himself: here we have also the opposites of unnecessary and usefulwhich are necessary and not-useful, like death. [29]

34. We would mention the reason why Porphyry omitted the mention of analysis while he mentioned the three methods. But before we mention it, we must know why the dialectical methods are four. We would show that with two arguments, the first of which is this. The reason why the dialectical methods have become four, neither more nor less, is that the things sought for are of two kinds: either simple or composite. By my word "simple" I mean that which is one such as God or man; and I mean by "composite" that which is composed of predicate and subject. The first (i.e., simple term) either has elements or not. If it has elements, then you should know that either it is analyzed into them or that it is composed of them. The first method is called the method of analysis, and the second, the method of definition. If it has no elements and nothing

higher than it, it is known by the things which are under it, and this by the fact that it is divided into that whose nature is to be the subject of the division. The method of division emerges from this.

35. As to the composite it only becomes clear by the fact that between two terms [30] (subject and predicate of a proposition) a middle (term) is introduced by which it is made evident and shown that the predicate belongs to the subjectsuch as it is shown that "man is an animal" by introducing "rational" between the terms. Thus it is said: man is rational; the rational is animal; man, then, is an animal.

36. The second argument is that since the aim of the art of logic is demonstration and demonstration derives from definition and definition from division and analysis, the dialectical methods are four. The dialectical methods are called logical ways because through them the rational soul comes to the knowledge of what it wants to know. Having known the reason why the dialectical methods are four, let us keep ourselves informed of their order.

37. We say: the first method is division, then analysis, definition, and fourthly, demonstration.[31] The reason for the priority of definition over demonstration is that demonstration is effected only through definition. And since demonstration requires definition, the discussion of the latter precedes that of the former. The reason for the priority of analysis and division over definition is that the composition of definition is accomplished through them. The reason for the priority of division over analysis is that all the ancients deduced the definition from division, not from analysis. And you must know that the aim of both division and analysis is multiplication, except that analysis is the reduction of the composite into the simple, while division is the opposite of that. For division descends from the simple to the composite, such as beginning from the genus and stopping with the individual.

38. It remains for us to know the reason for Porphyry's failure to mention analysis. We say: that is evident from two arguments. The first of them is that it was not the aim of Porphyry to enumerate all the logical methods. His aim, rather, was to show that the five predicables are useful for those

methods, and he was satisfied with having shown that they are useful for one or two of those methods. The second argument is that he mentioned only those logical methods which he employs in the *Eisagoge*, and refrained from mentioning that which he does not make use of. What he makes use of are division, definition, and demonstration. Analysis is not made use of, not because it is not possible, but rather it is not needed because that from which definition is derived is that into which analysis is made.

39. An objection [32] may be raised against Porphyry. It is this: How did he allow definition to precede division, seeing that the deduction of the former is effected through division? We say: that he did that for three reasons. Firstly, the investigation of the dialectical methods was not Porphyry's aim in this context, hence he arranged the methods in the order he had to. Secondly, he placed definition at the head because it is the first of the methods enumerated in the *Eisagoge*; that is implied by his statement "what the genus is, and what the differentia is." Thirdly, because definition is more difficult and more obscure than division, and it is necessary that the more difficult thing should have precedence over that which is easy.

40. *Porphyry*: I will seek to describe to you in a short book, and briefly in a form of introduction, what the ancients said, refraining from those issues which are more difficult, but directing my attention in a proper manner to such as are simple.

41. *Commentator*: This is the first part of the *Eisagoge*, and its preface proceeds by giving reason for it. He prefaces it with a reason so that when he mentions it he may not be asked about his reason. By his statement that he intended to describe what the ancients discussed, he abstains from obscure terms, since (ordinary) language is produced by the multitude, whereas concepts are the responsibility of the specialists (i.e., philosophers). By his word "briefly" he avoids prolixity. By his phrase "in a form of introduction," he avoids the equivocal name, and the badness of a composition, because his intention in the introduction was clarification and elaboration. By his statement that he would avoid such issues as are more diffi-

cult, he abstained from the difficult propositions. And, by his statement that he would proceed in a proper manner, he abstained from extreme abridgement (of the doctrine). Here we break off our detailed statement on this lesson.

Seventh Lesson

42. *Porphyry*: Therefore, I shall refrain from discussing genus and the species.

43. *Commentator*: After Porphyry had informed us of the purpose of the *Eisagoge* and its usefulness, and had taught us the method of its instruction, and had maintained that it is a way intermediate between the difficult and the easylest it might be thought that part of this discourse proceeds according to the claim, I mean, his statement "that the propositions regarding genera and species are difficult"he sets out to enumerate the difficult propositions concerning genera and species which he failed to investigate in the *Eisagoge*. He states that the difficult propositions which he refrained from discussing in the *Eisagoge* concerning genera and species are three. The first one is: do genera and species (really) exist or do they exist only in unrestricted [33] imagination? The second is: if they exist, are they corporeal or incorporeal? The third is: if they are incorporeal, are they separate both in concrete existence and in thought like God, or they are separate only in thought, while in their concrete existence they are conjoined to matter like line and surface?

44. You must know that Porphyry did not refrain from discussing these propositions out of sympathy for Chrysaorius, as is alleged by many commentators, but he left them only because it is not necessary for the logician to discuss, concerning genera and species, these inquiries in view of the fact that general matters and the terms that signify them are the subject matter for the logician. Aristotle has already made it clear in the *Posterior Analytics* that it is not possible for the practitioner of a certain art to discuss the existence of the subject matter of his art, but he assumes it. For the carpenter does not discuss the existence of the nature of the wood, which is his

subject matter, whether it is one of the four elements or whether it has a form existing in God Almighty, but assumes it, and makes out of it what his art requires. Similarly, Porphyry omitted the investigation, in the case of genera and species, of these propositions because they do not concern the logician. [34]

45. As for the ancients (i.e., the Greeks) they kept on discussing these questions, i.e., regarding genera and species. This is evident from the fact that Antisthenes, the Cynic, used to argue with Plato in discussion-sessions and opposed him regarding the existence of genera and species, maintaining that they have no existence but are mere names. Antisthenes proved that in this way: he maintained that particular objects are perceived by his sensible faculty; but genera and species are not perceived by his sensible faculty. Plato would answer that the faculty whose nature it is to perceive individuals exists for him, and which faculty is sense. But the faculty whose nature it is to perceive universals does not exist for him, and that faculty is the rational faculty. For it is this faculty which abstracts universal forms as it (the rational faculty) develops and as the impurities of the body disappear.[35]

46. The Stoics believed that genera and species are bodies. Many of the commentators have argued in support of the Stoic philosophers by saying that the Stoics only meant by "body" that which exists.[36]

47. Plato, however, believed that genera and species have triple (stages of) existence: existence "before the many."[37] His belief was that there are forms existing with God before He created His creatures, for Plato believed that the Form of man, ass and gold existed with God and after their pattern (Form) nature performed its operations. Commentators have argued in support of Plato by saying that such a philosopher could not hold this belief. But Plato meant by Form the power of God, may His name be praised, and His knowledge of what He wishes to do. That is to say, that everyone who wishes to do something reflects on it and forms a conception of it before he does it; this Plato called Form.

48. Aristotle, however, did not follow these views (of Plato), but followed what we mentioned at first, namely that a form

exists "in the many," like natural genera and species. Also, Aristotle did not believe in this doctrine (of Plato), for he did not believe that genera and species exist, but rather that that which exists consists of these sensible and particular individuals.

49. The form which exists "after the many" are the logical genera and logical species. These are the forms abstracted by the soul from likenesses which it finds in natural things alone. Aristotle believes that these alone (i.e., the abstracted forms) are genera and species.

50. Having enumerated the problems regarding genera and species which he failed to investigate, Porphyry informs us of the procedure which he follows in the presentation of what he presents with regard to the case of genera and species. He says he would explain them according to the doctrine of the Peripatetics, i.e., Aristotle and his disciples, because this book is only an introduction to the *Categories* of Aristotle, the Peripatetic. Aristotle was called peripatetic because he used to walk when he was teaching philosophy. The reason why he used to walk will be shown by three arguments. The first is (his desire) to imitate Plato, for Plato used to walk while he was teaching, saying, "All of us humans must train the body in addition to (training) the soul." [38] The second argument is the search for humility, because it is fitting for a philosopher to be humble. The third argument is reverence for philosophy, for if it is revered among the generality of men, how much better should it be revered among the specialists (professional philosophers)!

51. Since we have already mentioned unrestricted imagination, we must divide the absolute imagination.[39] We say: of imagination one kind is unrestricted, the other is restricted. The restricted imagination is to represent things that have likenesses in reality to which the mind, if it wishes, may refer them (representations), for instance the (sensible) form of Zaid. For this form is conceived by a restricted imagination, i.e., by a true imagination. Unrestricted imagination, on the other hand, is the imagination of things which have no existence, such as the imagination of an animal composed of goat and stag. On this view of imagination commentators are in agreement. The

true division is as follows: imagination is divided into unrestricted and restricted, and the unrestricted into real and unreal. The restricted imagination is such as the imagination of forms which have likenesses which resemble them (forms), like the form of Zaid which (form) is itself of a particular thing. But the real unrestricted imagination is such as the imagination of forms which exist, but the mind abstracts them from the appearances through which the forms exist. Thus, the forms of animal and all matters universal are real forms, but they do not have likenesses in existence. For an absolute animal does not exist, but the existence of animal is dependent upon Zaid who is a certain animal. The unreal unrestricted imagination is such as the imagination of a goat-stag (unicorn) and a legendary bird (griffin), and, in general, the imagination of things which do not at all have any connection with (actual) existence, but are creations of the mind, having no existence (whatsoever). [40] And with this the discussion of the generalities of this lesson is concluded.

52. Porphyry: Therefore, I shall refrain from discussing genera and species whether they exist or are placed in mere unrestricted imaginations.

Commentator: The way these words are put together is as follows: "I will write for you a book on these five predicables, avoiding the paths of difficulty and ease in it, while seeking to examine it in an intermediate way. Within the whole of the difficult investigation which I will refrain (from discussing) is the investigation of genera and species, whether they exist or not, or whether they are simply unrestricted imaginations."

53. You must know that difficulty and ease do not occur only to these (questions) alone, but also to other things such as man. For it is difficult, on the one hand, to examine him, while it is easy, on the other hand. As for the difficulty (it comes) when it is examined whether his body is composed of similar parts as Anaxagoras maintained, or it is composed of parts which are indivisible according to Epicurus, or it is composed of the four elements according to Hippocrates, Plato, and others.[41] Moreover, there is difficulty when there is an investigation into the soul of man whether it is (composed) of harmonic numbers according to the view of Pythagoras, or

whether it has a Form with the Almighty God according to Plato, or whether it is a self-moving number as Xenocrates observed.[42] The ease (comes) when there is an investigation about whether man is the earth's common animal.

54. It will not be too much to go beyond what we are after and show that genera and species exist, even if this does not properly belong to what we are after. We say: if individuals of man or of any species happen to participate in one concept, there exists a species, i.e., only when they (individuals) participate (in one concept). Species, then, exists. As to the fact that they participate it is evident because if you were to call out the word "man" and Zaid or 'Umar or others answered, this would not be surprising, for it is known from this that the concept in which they participate is understood (by them): that concept is the species, and this concept, with reference to man is a mortal, rational animal. On this showing, we know, from the union of ass and man in one concept, that genus exists.[43]

55. The word "only" is used in two senses: it is said of that which is one, not two, as when we say that the sun is one "only"; and it is said of that which is to be distinguished from another, as when we say that "so-and-so" is in the war and with him is "only" a bow in order to distinguish him from someone else having more instruments of war with him. This is what the second means.

56. *Porphyry*: And if they exist, are they corporeal or incorporeal? (He means: if genera and species exist are they corporeal or incorporeal?)

Commentator: This is the second inquiry concerning genera and species. We would go beyond what we are after and show it briefly: genera and species are not corporeal; they are forms existing in thought. For if they were corporeal it would follow necessarily that the body of elephant and other big bodily animals would be in the mind, and this is impossible.

57. *Porphyry*: Are they separate or perceptible in objects? (He means: if genera and species are incorporeal, are they absolutely separable from matter, or they are in some way dependent upon sensible and concrete existence?) Since an inquiry into that is difficult it requires

another investigation loftier than this. (He means: since the inquiry into genera and species in terms of these questions is a complicated one, it requires another (branch of) knowledge which is loftier than logic.)

Commentator: The translation of this passage is confused. The passage should be translated in this way: If they (i.e., genera and species) are incorporeal, are they separable or they are dependent upon sensible things? The interpretation of this statement is this: If they are incorporeal, are they absolutely separable from matter like God and the Platonic Forms? If they exist or are dependent on sensible things like mathematical quantities, then, they are bare in the mind and not bare in (concrete) existence. As for the investigation which is still loftier than this, he means the *Metaphysics* where an investigation is made into the highest genera and universal matters insofar as they exist. 44

58. *Porphyry*: As for the manner in which the ancients and especially the Peripatetics among them described these and (other) proposed subjects in a logical way, I will now seek to explain.

Commentator: The word "these" refers to genera and species, and "other proposed subjects" refers to propria, differentiae and accidents. His phrase "in a logical way" means in accordance with the terms that signify them. The addition of the Peripatetics is because the purpose of the *Eisagoge* is merely to provide an introduction to the *Categories* of Aristotle, the Peripatetic. As for his statement "I will seek to explain it to you," it is in order that he (Chrysaorius) might obtain, through the *Eisagoge*, knowledge of the Aristotelian *Categories*. And with this let us conclude our detailed statement on this lesson.

Eighth Lesson
Discourse on Genus

59. Porphyry: I see that neither the genus nor the species is predicated absolutely.

Commentator: Having followed the appropriate custom of the ancients in explaining to us the purpose of the *Eisagoge*,

its usefulness and the method which we must follow regarding its teaching, Porphyry now sets out to teach us what he had begun with, namely, the first logical terms and the things which they signify.

60. He placed at the head of them all the discussion of genus, because it is one of the things essential to the species, and the discussion of things essential to something must precede that of things accidentaland (also) because genus is one of the substantial things which resemble a substratum, while differentia resembles a form. The existence of the substratum is prior to that of the form as well as that of the composite of the twothis composite being the species. However, if his action in making genus prior is a correct one, then, his connecting species with it and his making differentia posterior (to species) would not be correct since differentia is simple and the species composite. But when he (Porphyry) himself enumerated in the first part of the book what was the purpose of the discussion, differentia followed genus. So, we would say that his action was perfectly correct. For universal forms are examined in two ways: (a) from the point of view of their essencesin accordance with which it was necessary for him to arrange genus first, differentia after genus, and species third; and (b), as they necessarily have both a particular and a general meaning, it was necessary for him to make species third after genus, because the genus is related to the species inasmuch as the genus is a genus of a species. Each related thing is connected one with the other, and it is impossible to separate one from the other. On this (fact) Porphyry based his view, for his investigation of the five predicables in the *Eisagoge* was only (conceived) from the point of view of their having both a particular and a general meaning. Hence he combined genus and species into one, since one of them cannot be conceived except through the other, like the case of father and son, and other related things.

61. A puzzle may arise regarding this, in this manner; Since Porphyry decided to look into genera and species both in their particular and general aspects, why did he not arrange them in that way at the beginning of his book? We say: Porphyry was aware that if he had arranged them in both places

(i.e., in the beginning of the book and the present place) someone would think that he (Porphyry) thinks that the arrangement of the predicables always proceeds in one way. Thus he wished to inform us of both aspects according to which he arranged the genera and species. He instructed us about their arrangement, first (as they occur) in a natural way, and secondly, according to the method of teaching, and it was better that he made the teaching method come later, because he had to arrange them for teaching purposes according to which he examines some of them in this book.

62. Porphyry investigates genus in three ways. Firstly, he divides the name genus into the meanings into which it is divided so as to determine the meaning appropriate to the logician. Secondly, he defines one of the meanings which are designated by the name genusa meaning which is appropriate to the logical art. Thirdly, he presents in detail the description by which the genus is described, and shows that the description is adequate, neither deficient nor excessive, for, by the name of genus twelve meanings are designated.

63. The first of them is the tribal (genus), I mean, a group of people who are related to one man, like a group of people related to Hercules and denominated by the genus of Heracliade. Or, a group of people related to another man, i.e., a man from whose name is derived the name of that group of people. This genus is called a tribal genus, and it is one of the terms which the multitude adopted to designate their genus. In this genus there are three (types of) relations: the relation of the group to its originthis relation is the relation of effect to the cause; the relation of the origin to the groupthis is the relation of cause to effects, and the relation of some members of the group to other members on account of which (relation) some of them are related and close to othersand this is the relation existing between one group of effects and another, and this relation is natural.

64. Relation is used in two senses: natural and accidental. The natural is like the relation of son to father. It is called natural merely because a son has a relationship to his father, for his father is the cause of his existence. The accidental relation is divided into four (types): voluntary relation, like the

relation of a friend to his friends; forced relation, like the relation of a slave to his master; a relation in respect of an art, like the relation of a pupil to his teacher; and a relation in respect of place, such as the relation of a man to his country and the place of his origin. [45]

65. The second (of the twelve meanings of genus) is: the principle of the generation of every one. This is divided into natural, and accidental principles. Yahya (Ibn 'Adi), however divides it into animate and inanimate principle. The natural is divided into proximate, like son, and remote, like grandfather. The accidental is divided into proximate, like the place of birth of a man, and remote, like his town. This genus is one of the genera which is conventionally designated by the multitude as their genus.

66. The third is the logical genus. This is the form existing in the soul; it is such that the species is arranged under it. It corresponds to the previous two genera, i.e., either to the tribal genus since both of them comprehend, and to the principle of generation since both of them are principles. It differs from them in that the logical genus comprehends species, while the multitude comprehends individuals. The logical genus is found in all of its species, while the multitude is not found in all of its individuals. It differs from the principle of generation inasmuch as the principle of generation corresponds to father and place, both of them being the (generative) sources of the individuals, whereas the (logical) genus is the source of the species. Furthermore, the principle of generation is not found in all of its individuals for the father is not found in the son, nor the place found in something of which it is the place, whereas the (logical) genus is found in its species.[46]

67. The fourth, fifth, sixth, seventh, and eight meanings of genus are the five genera which Plato laid down as the common genera for existing things. They are Existence, Sameness, Otherness, Potentiality, and Actuality. For Plato maintained that everything that exists has these five (characteristics), as they are common to all existents.[47] Aristotle and the commentators of his books do not admit that potentiality can be predicated[48] of all things, for if the First Cause and Plato's Forms exist, they do not exist potentially. In general, the con-

cept of potentiality is only applied to that which is connected with matter or substratum. [49] It is the metaphysician who investigates these five genera.

68. The ninth, tenth, and eleventh meanings of genus are three genera referred to by grammarians who make them genera for, (a) words, like masculine for all masculine words and, (b) feminine for all feminine words, (c) the word that is neither masculine nor feminine. These (genera) are examined by the grammarian.[50]

69. The twelfth meaning of the genus is the genus as the matter laid down by Aristotle as receptive of all natural forms as well as of other mathematical forms. Aristotle made matter a genus because it is comprehensive of all the species which it comprehends.[51] This is a field of investigation for the natural scientist.

70. Of these (twelve) meanings of genus Porphyry stated only three, namely, the logical genus and the two genera whose existence is admitted by the multitude, because it was not his aim to exhaust the meanings of genus. His aim was merely to make clear the correctness of his claim that the name genus is an equivocal name. Such a claim is correct by his mention of only two meanings. However, to the one who asks: why did Porphyry state the two genera of the multitude and not state the others, we would say: he did that because these two genera are obvious. Whoever brought allegations must prove them from self-evident and admitted, not from obscure, matters. Yet, if the existence of the genera which Plato held is valid, and if they are genera, as well as the three genera held by the grammarians, and if the natural genus had not this name (i.e., of genus)unless the term is used metaphorically, they all, when properly considered, come under the logical genus, because they (Plato's genera) exist as common to things which possess them, like species.

71. Porphyry was right in not beginning with the definition of the genus, but with its division because equivocal name, if they are not divided, make us err in our understandings, and they afford the sophist an occasion for contention. For if a man is asked about the essence of the Good and he does not first divide it into its meanings and answers it by one of its

parts of definition, even if it happens to be about the one which the questioner asked for, then the questioner may contest him by producing another one of the meanings which is not signified by that name, and he would show that the definition (i.e., of the answerer) is not its definition. With this let us break off the discussion of the generalities of this lesson, and take up its details.

72. *Porphyry*: I see that neither the genus nor the species is predicated absolutely.

Commentator: Commentators maintain that Porphyry's words, "I see," are used in place of the words, "it appears," [52] and that he did that in search of humility and in order to refrain from bold and definitive statements on a matter under consideration. His word, "absolutely," means that genus and species are not predicated univocally, but that they are two equivocal names. The word, "absolutely," is used in three senses: (a) in the sense of particularity, (b) in the sense of universality, and (c) in the sense of preciseness.[53] The sense of particularity resembles when we say: man is a scribe "absolutely" inasmuch as writing is found only in the species man, although it may be found in one member of the species. The sense of universality resembles when we say: man is an animal "absolutely"; we mean by that that every man is an animal. As to its sense of preciseness (it is as) when we state it without addition, as when we say: man is an animal "absolutely," meaning that he is not an animal because of something else. That which is asserted with addition is such as when we say: if the sun is above the earth, the atmosphere is illuminated. Thus the word, "absolutely," indicates the nonexistence of addition[54] in something by which something else is judged; however, this thing by which judgment is made by means of addition may be true of a part or a whole of something, or it may, strictly speaking, be true of both (i.e., part and whole).

73. *Porphyry*: For that is called genus because it is a collection of people who are related. (Understand from the sentence in front of 'relation' the simple relation. He means genus is predicated of a collection of people related to one [man], I mean, a collection of individuals related to one origin they have as the first father). Their

relation to him is in one way (he means their relation to him is in one way, i.e., the relation of many people to their origin, not its to them, nor of some of them to the others. And he means by "in one way" a natural relation, i.e., their relation to him is the relation of sons). This relation differs from that among the other members (of the genus). (He means: some of them are related to others, as, if you say: this is a paternal uncle or maternal uncle or proximate father of that.) According to which signification the genus of Heraclidae is designated due to their relation to one, I mean, Hercules. (He means: just as you say the genus of the Heraclidae is due to their relation to Hercules, their father.) Since a multitude of those who have kinship with each other because of him are designated a genus . . . (He means: on account of Hercules and their relationship to him, they are denominated a genus. For although some of them are related as maternal and paternal uncles to the rest of them, they are denominated a genus because of their relation to the first man.) . . . and because of their separation from other genera. (He means: the relation that is traced to someone different from Hercules, for by its relation to Hercules this multitude is separated from the other multitudes.)

74. Commentator: The phrase, "because it," gives a reason. The statement is put together in this way: genus and species are two equivocal names, because genus is said of the tribal genus and the principle of generation, like the saying of Plato in the *Phaedo*: that genus is a collection (of things) which are related to one. [55] The reason for his (i.e., Porphyry's) addition of "in one way" is because relation is an equivocal name. In this context, Porphyry intends one of its meanings, namely, the natural relation. By his phrase, "to one," he indicates to us the relation of the multitude to their origin. By his phrase, "with each other," he indicates to us the relation of some members of the multitude to others. He omitted the relation of the origin to the multitude because that is obvious, and also because he made mention of that in his mention of the second (type of) genus. Relation, as we said, is of three kinds.

75. Porphyry: Also, in another way, it is called genus because it is the principle of the generation of every one, whether from the generator or from the place in which a man is (generated).

Commentator: The meaning of his phrase, "in another way." is that it is called a genus in another sense besides the first. This is the second of the two meanings of genus, and it is divided, according to what we said, into animate and inanimate. The animate is divided into proximate and remote, such as father and grandfather, and the inanimate into proximate and remote, such as city and house, like the saying of Homer, "Our birthplace benefits us because it receives our bodies and the bodies of our forefathers."

76. Porphyry: In this way . . . (his statement is in accordance with the second meaning, namely, the natural relation) . . . we say that Orestes had his genus from Tantalus and Hyllus from Hercules.

Commentator: This is an example of the principle of natural generation: Tantalus represents the generator, while Hercules represents the ancestor, for he is the genus of Hyllus, inasmuch as he is the principle of generation of the latter.

77. *Porphyry*: We say also that Athens is the genus of Plato, and Thebes of Tantalus.

Commentator: This is an example of the principle of accidental generation, both proximate and remote. Athens represents the proximate accidental generation, and Thebes the remote.

78. *Porphyry*: That is to say that a country is a principle for every man's generation, just like a father.

Commentator: The form of this statement is a solution of a puzzle. The puzzle itself is this: grant that we take the father to be the principle of generation because he produces the son in a place. In what way, Porphyry, do you permit making him (father) the principle of generation? The solution of the puzzle is this: just as the father requires a place for producing the son, so does he require a place also. For all existing things which require a producer for their production also require a place for their production. The place, then, in terms of the origin (of something), is like the father. People rate highly (the role of)

place with regard to coming-to-be by saying: all animals require a generator because animals which are generated from the decay existing in the elements of earth, water, and air do not require a generator, but they require a place. For, Hesiod also, in his poem, sings that the place is the first thing (required) before the existing things, because all existing things, in his opinion, require a place. However, this, in truth, is most evident.

79. *Porphyry*: It appears that this meaning is very clear. (He means that the principle of the generation is more truly generic than the tribal genus.) For the Heraclidae are descended from Hercules, their genus. (He means for the multitude is related to Hercules who is the origin of its existence. Therefore he (i.e., Hercules) is more truly generic than the tribal genus.) For the Heraclidae are those from Cecrops, and their kinsmen. (He means: that their ancestor, is Cecrops, for he was their origin, and, therefore, is more truly generic than they.) The first genus must be called the principle of each man's generation. (He means: that the principle of the origination of the whole is more basic in respect of genus than the whole.) After that the multitude of people who are from one principle, such as Hercules. (He means: since the principle is the origin of the multitude, it is more truly generic than the multitude.) When we separate this multitude from the other multitudes, we call the former the genus of the Heraclidae. (He means: the distinction of some genera from others derives from the principles to which they are related. That indicates that the genus of the Heraclidae is distinguished from other genera through affiliation to Hercules.)

80. *Commentator*: Having enumerated two out of the several meanings of the name of genus, Porphyry begins to show us that they are more truly generic, for he says that the principle of the generation is more truly generic. Understand that it is the natural (relation), not the accidental, which is more truly generic, because Hercules preceded the multitude. The multitude existed after him. Thus because he was before it, he deserved to be more truly generic than the multitude. Com-

mentators, however, maintain that it is possible that Porphyry's statement, "it appears that this meaning is very clear," refers to the first and second meanings. For the first meaning, i.e., the tribal genus, is more clear to us since the multitude, through our sensation, is more manifest than its principle. The second meaning, i.e., the principle of the generation, is more manifest in relation to nature because nature is the first thing that produced Hercules before the multitude was made out of him.

81. *Porphyry*: Again, in another way, that is called genus under which the species is arranged. (He means: the form existing in the soul under which the species is arranged.) And it is proper that it should be called genus .. . (he means: the logical genus) . . . due to the resemblance between these two characterizations; (he means: the principle of the generation and the multitude, i.e., the tribal genus), for this genus . . . (he means: the logical genus) . . . is a certain principle for the species under it. (He means: for each one of the species is composed only of the genus and the differentiae: the genus is the principle of the species, and, therefore, resembles the principle of generation.) It is supposed to comprehend all the multitude under it. (He means: inasmuch as the genus is a universal, it comprehends all the things under it, and, thus, resembles the tribe which comprehends the multitude. The principle of accidental generation is that which is the place, because it contains the thing occupying space although it itself is not in the thing which occupies space.)

82. *Commentator*: His statement, "again, in another way, that is called genus," means that the genus has another meaning, other than the multitude and the principle of generation. This meaning is that the genus is that under which the species is subsumed. This is the first description of the genus, but it is a broad description, and he will condense it later. As for his statement, "and it is proper," he said it merely so that it might not be supposed that this is the only one most certainly called a genus because of its resemblance to the other two. It may (still) be called genus because of its resemblance to the other two or without them. That it is the principle for the species

and comprehensive of them is (shown) in two ways: It is a principle qua essence, and it is comprehensive qua universal. The reason for his statement, "it is supposed to comprehend all the multitude," is not because this supposition is false, but he added it because this fact is not clarified later. And with this let us break off our detailed statement on this lesson.

Ninth Lesson

83. *Porphyry*: As the genus is predicated triply, the discussion of philosophers concerns only the third.

Commentator: After Porphyry had divided the name of genus and had enumerated its meanings and had specified which one of them is investigated by the logiciannamely, that which is the form existing in the soul under which the species is subsumedhe now takes up the definition of this one. He defines it by saying that the genus is predicated of many things differing in species in respect of what a thing is.

84. There is an objection against Porphyry which is this: how did you begin, Porphyry, by defining the genus at the time of your opening a discussion of it, while you know from logical laws that every thing investigated is investigated only under the following inquiries: Firstly, does it exist? Secondly, what is it? You should have prefaced your investigation of the genus by discussing whether it exists, and then, discuss what it is.

85. The solution of the objection is as follows: you know that the subject matter of logic consists in the simple terms which signify universal forms, and the genus is one of such universal forms. You know, furthermore, that it is not for the craftsman to investigate the subject matter of an art whether it exists or not, but he assumes the existence of the subject matter. For this reason, Porphyry omitted the investigation of the existence of genus and concerned himself with the investigation of its essence. [56] Since the discussion has already been long, it was not necessary for him to repeat the description of genus. He says: the genus is that which is predicated of many things differing in species in respect of what a thing is.

86. We know from the introduction which we prefaced in

this book 57 that every description or definition is true only when it belongs to the thing described alone, neither excessive nor narrow. It is better that we consider this description and examine whether or not it is a true description.

87. We say: true descriptions and definitions are those which include a genus which the thing defined shares with others since it is possible for that thing and for the differentiae which separate the thing (defined) from the other things which have community with that thing to share in a genus. And since the genus is a universal, and the universal predicates are five, as we said at the beginning of the book, then it (genus) is common to the other four predicables in that it is a universal, viz., it is predicated of many things. This sentence, "viz., it is predicated of many," is like the genus. We said "differing in species" so as to differentiate the genus from proprium and species, since the latter two are predicated only of individuals. Our phrase, "in respect of what a thing is," is meant to differentiate the genus from the differentia, and the accident, since these two are predicated only in respect of what sort a thing is of. Now, since in the description of the genus there is something which it has in common with all the universal things and differentiae which differentiate it from the others, there is no doubt that this description is adequate and perfectly sound, because the description belongs to it alone.

88. An objection may be raised against Porphyry. It is this: what is the reason for your assertion that the philosophers discussed the genus, and your failure to say they defined it? The answer is that definition is of a determinate thing, constituted by an assigned genus and an assigned differentia with regard to the thing itself without any relation to anything else. The absolute genus is not a determinate thing existing by itself in isolation, neither qua essence, nor qua genus. The supreme genera qua essences are ten, but the absolute genus qua universal is one and has the relation of the genus to its species; it is not by itself. It is described, rather than defined, on account of this relation, because a relation is a relation to some other thing, whereas the definition of something must not be derived from a relation to something else. For this reason, Porphyry said they described the genus and he did not say they defined it.

89. In that manner may be solved the puzzle regarding the species. For the species also has a description, not a definition. Moreover, if the absolute genus were to have a definition, and each definition is composed of a genus and a differentia, it would follow necessarily that the absolute genus is a genus, and this would proceed to infinity; and so also would be the case of the differentia. [58]

90. We may ask a second question which is this: what is the reason why the philosophers investigated (only) one, i.e., that which is in the soul, of the entire three meanings of genus which he enumerated? The answer to this question is that the aim of philosophers and, in general, of all scientific crafts consists only in the perception of the true natures of existing things. Since existing things are partly particular and partly universal, and the particulars are those which are in a flux between generation and corruption and all changes, and whose characters are not fixed so as to be known, it remains that knowledge should only be of universal forms.[59] For this reason, the investigation of philosophers came (to center) on this (particular) one of the meanings of genus. And with this let us break off our discussion of the generalities of this lesson and take up its details.

91. *Porphyry*: Since the genus is predicated triply . . . (he means: (a) the tribal genus, (b) the principle of generation, and (c) the logical genus.) . . . the discussion of the philosophers concerned the third. (He means: the investigation of the philosophers concerned only the logical genus and not the principle of generation nor the tribal genus). It is that which they described by saying that the genus is that which is predicated of many things, differing in species in respect of what a thing is. (He means: it is predicated of many things differing in species. If it is asked how it can be predicated of one of these things (species) the answer would be by the genus.)

Commentator: We have already stated why the discussion of the philosophers centered on this one of the meanings of genus. You must know that it is described in this way inasmuch as it is a universal. We, on our part, would describe the genus by a description which is more profound. We say: the genus

is a form existing in the soul which it (i.e., the soul) abstracts from the manifold existing in things, and it is predicated of many things differing in species in respect of what a thing is. We must consider the reason why he said that the genus is predicated of many species. We say: the reason for that is that the genuine predication must make reference to individuals. Before we provide the reason for that, let us tell what predication is, and what sort of things are predicated. 60

92. We say: predication is to judge something of somethings (else), and the things predicated are those forms existing in the soul: and the things of which they are predicated are the individuals. The usefulness of our predicating the forms in the soul of things outside it is because the forms which are in the soul are divided into two: (a) forms which are falsely conceived and, (b) forms which are truly conceived. So, because of the mixture of the two, the mind is required to distinguish them. Their distinction is accomplished by their being compared to what is real and conforms to existence (reality). Those forms that are instantiated in (concrete) existence are truly conceived and are not subject to doubt, such as the form of man. For the external form of Zaid testifies to the reality of the conception of man. Those forms that are not applicable to reality are to be disregarded, such as the conception of the goat-stag and such things. For this reason, Porphyry reduced the predication of genus to individuals differing in species and not to species.

93. *Porphyry*: An example of that is animal. (He means: an example of the logical genus is animal. For this is a form in the soul which comprehends man and ox and others.)

Commentator: An example is that which shows the universal through the particular, as, if you say: if man travels by sea he gets drowned because when a certain person travelled by sea he got drowned. There are two uses of examples: (a) To bring something existing in the mind closer to reality and to cause it to cease to be false; (b) to clarify the thing exemplified. The reason why he made an example of animal and not of substance is because animal is more apparent than substance. The example must be made by something which is

clear, not by something hidden, particularly, to students of this book which is an introduction.

94. *Porphyry*: Of predicates, some are predicated of one thing only, as individuals like Socrates, and this individual and this thing. (He means: of predicates some are predicated of one thing, like the name of Socrates which is predicated of him, and the form of him existing in the soul is predicated of one, i.e., of him.) Others are predicated of many different things, as genera, species, differentia, propria and accidents which are predicated in common, but not peculiarly. (He means: others are predicated of many. These are the forms in the soul. They are genus, species, differentia, proprium and accident. That which is predicated in common is not a propium but accident, for proprium is predicated peculiarly.) The genus is such as animal. (He means: animal is predicated of its species, like man, ox and others.) The species is such as man. (He means: man is predicated of its individuals such as Socrates, Plato and so on.) The differentia is such as rational. (He means: it is predicated of species. It is the nature of the differentia to be predicated of the species, for it is their differentia). The proprium is such as risible (He means: risible is predicated of its species and its individuals.) And the accident is such as white, black, standing, and sitting. (It is its nature to be predicated of them, i.e., the things of which it is the accident.)

95. *Commentator*: Porphyry begins by investigating the description of the genus. Firstly, he enumerates all the universal things and, in general, all the predicables, which are common to it (genus). Then he shows that, in the description of the genus, he has brought out the differences which differentiate it from all the other predicables. Then he continues and divides the predicates, and says that the predicate is, on the one hand, an individual; but we must not think that the individual is predicated because we have already said that predicates are only the universal forms existing in the soul, whereas the individual has a concrete existence. But we understand from his statement, "that the individual is a predicate," that

its name is predicated of it. On this point Matta (Ibn Yunus) and a number of commentators are of this opinion, for if the individual is predicated it is its form existing in the soul which is predicated of an individual outside (the soul).

96. On the other hand, the predicate is a universal. Universal predicates are genus, species, differentia, proprium and accident. The reason for connecting his statement, "which are predicated in common," to accidents was meant to differentiate it from the proprium because it is also an accident except that it is predicated peculiarly. The reason why Porphyry gives one example of each predicable but two of accident is that the accident is divisible into two, separable and inseparable. An inseparable accident is such as whiteness existing in snow or blackness existing in pitch. A separable accident is such as standing and sitting. The reason for his use of the differentia with matter and expressed it by "rational" is because the differentia, which (in this case) is rationality, is truly a state, and it is not correct that a state should, by itself, be predicated of that which possesses that state, for it is not correct to predicate whiteness of man by saying, "'man is whiteness," but (it is correct to say) "man is white." 61

97. *Porphyry*: The genera differ from the things which are predicated of one thing only, for they are among the things which are described as predicated of many. (He means: the genera differ from individuals because genus is predicated of many, while the individual is predicated of one thing.)

Commentator: He begins his investigation, and shows that the description of the genus is adequate, and in accordance with this description separates it from the individual which is predicated of one thing, while the genus is predicated of many.

98. *Porphyry*: Genus differs from those things which are predicated of many . . . (he means: species, differentia, proprium and accident) . . . by (such) things. (He means: by differentiae). It differs from the species; although they (species) are predicated of many, yet they are not predicated of many things differing in species but in number. (He means: the differences of genus make it different in that it differs from the species because it is

predicated of many species, while the species is predicated of many individuals, not of species). For 'man', being a species is predicated of Socrates and Plato, who do not differ in species, but in number. (He means: Since individual men with regard to the nature of their species are one, the species is that which is predicated of individuals agreeable to, and not different from, that species). As regards animal, since it is a genus, it is predicated of man, horse and ox which differ from each other in species, and not only in number. (He means: as for animal, it is a genus and, thus, is predicated of many species, like horse and ox which differ in species, not only in number. This is the difference between genus and species. The many of which the species is predicated do not differ in species, whereas the many predicated of the genus do differ in species).

Commentator: The reason why he sets forth beforehand the difference between genus and species is because the latter is connected with the former. We have already, in a preceding passage, given the reason why predication reduces to the individuals, and we have given the difference between genus and species in the preceding general account of the lesson.

99. *Porphyry*: Genus differs from proprium because proprium is predicated only of one species, of which it is the proprium, and of the individuals under that species, like risible which is predicated of man alone and of individual men. As for the genus, it is not predicated only of one species, but of many different species.

Commentator: The reason why he links the difference between genus and species with the difference between genus and proprium is because species and proprium are equal in that both of them are predicated of many things that are numerically different.

100. *Porphyry*: Moreover, genus differs from differentiae and from accidents in common because differentiae and accidents which are predicated in common, although they are predicated of many things differing in species, yet are not predicated in reference

to what a thing is, i.e., when we ask about something of which these (differentiae and accidents) are predicated; but they are rather predicated in reference to what sort a thing is of. For when we ask what sort of animal a man is, we say that he is rational. And when we ask what sort of animal a crow is, we say that it is black. "Rational" is a differentia, and "black" is an accident. But when we are asked what is man? we answer, an animal, because the genus of man is animal. (He means: It is admitted that it is animal).

Commentator: The reason for his linking differentiae and accident is that both of them are equal in that they are predicated of many things differing in species in respect of what sort a thing is of. The difference between them is that accident is not constitutive of the essence of a thing, whereas the differentia is. The accident belongs primarily to the individual, and, secondarily, to the species. The differentia belongs primarily to the species, and secondarily, to the individual. His statement, "because the genus of man is animal," means that it is admitted that it is animal.

101. *Porphyry*: Our statement regarding genus that it is predicated of many distinguishes it from things which are predicated of one thing only, things having no parts, i.e., individuals. (He means: by this statement we distinguish the genus from the individual and that which has no indication of having some parts, since the individual is predicated of one thing, while the genus is predicated of many species). Our statement, "differing in species," differentiates the genus from such other predicables as species and propria. (He means: because species are predicated only of individuals, and propria of one species and its individuals, while the genus is predicated of the species). Our statement that "the genus is predicated in reference to what a thing is" distinguishes it from differentiae and accidents in common, which are not predicated in reference to what a thing is, but in reference to what sort a thing

is of and in whatever manner it exists. (He means: the statement regarding genus that it is predicated in respect of what a thing is, distinguishes it from differentiae and accidents in common because these are predicated in respect of what sort a thing is of, and in whatever manner it exists, while the genus is predicated in respect of what a thing is. "What sort a thing is of" asks about differentiae and inseparable accidents or those things whose disappearance is slow; and "in whatever manner" asks about separable accidents, like sitting and standing, which quickly disappear.) The description, then, of the conception of genus contains nothing superfluous and nothing deficient. (He means: in the description of genus, there is neither superfluity nor deficiency, since there are in the description differences which differentiate the genus from all things which are common to the genus).

102. *Commentator*: This chapter contains two things, the first of which is a summary of the differences between genus and the rest of the predicables. The second gets at what we are after, namely, that the description of genus is neither superfluous nor deficient but adequate since there are in the description differences which differentiate the genus from the rest of the predicables. That which is indivisible indicates the individual. His statement regarding the individual that it is indivisible does not mean that it is not capable of being divided, but that it is indivisible in the sense that if it is divided it would be corrupted.

103. That which is indivisible is used in six senses: (a) It is said of that which is indivisible by nature, such as a point or a moment. (b) It is said of that which is indivisible because its partition is found to be difficult, like flint. (c) It is said of something that it is indivisible in the sense that no art seeks to partition it, such as the infimae species. For these cannot be divided by an art because there is no use in their division. That is to say, that their division is infinite, and the infinite is unknowable, and yet division is for the purposes of knowledge. (d) It is said of something that it is indivisible if it has not yet

been divided, for instance, a piece of wood which has not yet been divided. (e) It is said of something that it is not divisible in the sense that if it is divided it would be corrupted, and this is the individual. (f) The sixth meaning is different from these meanings. It is this: that which is indivisible in the sense of negation, such as substance and quality. For these two are indivisible in respect of essence, and if they are divided that division would be accidental. [62]

104. This name is applied to all the six in addition to the meaning peculiar to each one of them. This judgment is applicable to each one of them; that is to say, that each of them is indivisible in the sense peculiar to it, i.e., either in the sense that its division is difficult or in the other senses we have enumerated. Thus, the affirmation of its divisibility would be false, while the negation of it would be true. For negation applies to all of them because of what we said. And with this let us break off our detailed statement on this lesson.

Tenth Lesson
Discourse on the Species

105. *Porphyry*: As for species it is predicated of the form of everything, according to which it is said, "form is first worthy of King."

Commentator: After Porphyry had finished his discussion of the genus by dividing it into its meanings, and had singled out the meaning which was discussed (by the philosophers), and had completed its definition, and had shown that the definition (of genus) was neither deficient nor superfluous he then took up the discussion of the species. He does for species what he did for genus, i.e., he begins by dividing the name of species into its (various) meanings, and (then) specifies which of the meanings of species he has in view. However, before we begin to divide the name of species, we must mention the reason why the discussion of genus was combined with that of species, and we would show that with three arguments.

106. The first is as follows: genus and species are related; in related things there is no way to separate one from the other, since the understanding of one of them is accomplished only through the understanding of the other. [63] This being so, it was necessary for Porphyry to connect his examination of genus with that of species. Secondly, the genus is predicated in respect of what a thing is, and the species is also so predicated. Thus, because of the community between the two he connected the discussion of one with the discussion of the other. Thirdly, species was often mentioned in reference to genus when he says: genus is that which is predicated of many species. Lest he might leave something regarding genus unintelligible which might perplex the student, he joined the discussion of species with that of genus. Since we have already explained the reason for the connection of genus and species, let us now take up the enumeration of the meanings of species.

107. We say: There are two meanings of species. The first is the apparent form of each individual. For there is no difference in the Greek language between the name of species and the name of form, nor between the name of matter and that of genus.[64] It is shown that this form, i.e., the apparent form, is called a species by the words of Euripides to Agamemnon when the Greeks wished to entrust him with the charge of their affairs. "Your 'species' is first worthy of the King,"[65] meaning, his apparent form. The second meaning is that species is a form existing in the soul which is arranged under genus, such as man which is arranged under animal, triangle under figure, and white under color.

108. After that Porphyry raises a strong objection from which it follows necessarily that the two definitions of genus and species are incorrect by reason of his use of a circular demonstration[66] for them, and the proof of one by the other. The objection is as follows: You asserted, Porphyry, that genus is predicated of many species. You told us that the genus is related to the species; and when you came to the species you related it to the genus, for you stated that species is that which is arranged under genus. Thus, it follows from this that you were explaining to us each one of the two by the other, while both are unknown to us. The result of this is that you were

explaining to us the unknown by the unknown. Your position in this, then, was that of the one asked to tell the distance between Rome and Constantinople and who answered that it is like the distance between Constantinople and Rome. And when he is asked again to tell the distance between Constantinople and Rome, he asserted that it is like the distance between Rome and Constantinople. Now, in both answers he explained to us nothing whatsoever; he merely indicated the unknown by the unknown. [67]

109. The solution of the objection runs as follows. Things are divided. One kind consists of those, some part of which are not dependent upon the others; and the other kind is such that the essence of each one of it, as well as its nature and meaning, are dependent upon the other and are related to it. In the first type, it should not be allowed to describe some of it by the others; instances of such are ox and man. For we do not indicate the nature of man by using the nature of ox, nor by making its (ox's) nature enter the definition of man. And, also, we do not indicate the nature of ox by using the nature of man, nor by making its (man's) nature enter the definition of ox. In related things, however, since the essences of some are inseparable from others, and (since) some of them are understandable only through others, the explanation of the meaning of one related thing is possible only after it is related to the other. Genus and species are both related. And, in clarifying the meaning of them, it is necessary that we use each one in the other. After setting forth the objection and its solution, Porphyry repeats the description of the species, and brings, in addition to this description, two other descriptions of the species.

110. Thus, the total description of species is threefold: (a) The species is that which is arranged under genus. (b) It is that whose genus is predicated of it. (c) It is that which is predicated, in respect of what a thing is, of many things differing in number. The first two descriptions, however, pertain to every species whether an infima or a subaltern. The third description is a characterization of the infima species. The reason why the third description is a characterization of the infima species is because it is connected with individuals and

is close to them, while the intermediate species are those remote from individuals and not primarily predicated of them. We must search for the reason why Porphyry repeated his description of the species which he first described after his presentation of the objection and its solution, and the reason for his describing the species in three ways, while he described the genus in one way.

111. We say that the reason for the repetition of the first description is (the desire) to imitate the ancients. For it was the custom of the ancients, in the event of an objection being raised about any of their judgments, to repeat that judgment in order to show that the objection did not shake the judgment. The reason for his describing the species in three ways, while he described the genus in one way, is because the genus has only one relation, namely its relation to that which is under it; hence it was necessary for it to be given one description. But the species has three relations: (a) Its relation to its genus; (b) the relation of its genus to it; (c) its relation to the individuals which it comprehends. Consequently, the species is described in three ways, except that in both of the first two descriptions they are one in a subject; the difference between them (i.e., *a* and *b*) exists only in respect of priority and posteriority (in their arrangement). For if you regard the relation from above you would relate the genus to the species. If you regard it from below you would relate the species to the genus. This is like one and the same distance: the going up is called ascent; the going down is called descent.

112. An objection may be raised regarding the third description of the species, and it is this: if you, Porphyry, asserted that we cannot separate the species from the genus because the former is related to the latter and that both the definition and the understanding of the species are impossible except in its relation to the genus, how do you then allow that the description of the species is a description which says that the species is that which is predicated of many things that are individually different, and you did not make mention at all of the genus? The solution of this objection is as follows: the species has two relations: its relation to the genus, and its relation to its individuals. [68] Your first two descriptions of the

species accord with its relation to its genus. Your third description accords with its relation to its individuals. This is sufficient for the solution of the objection.

113. Another objection may be raised regarding the third description, it is as follows: How do you maintain, Porphyry, that species is that which is predicated of many things that are individually different, while we see many species which do not consist of individuals, but consist of only one (individual), namely, that of phoenix, for there is always found only one individual in this species? The solution of this objection is as follows: Species is predicated either of many things differing in individuals existing in actuality, or of many things differing in individuals whose existence is through reproduction. This is enough for the solution of the objection.

114. Commentators add two other descriptions for the species: (a) that the species is that which cannot be genus; (b) species is that which is not divisible into species, but into individuals. These two descriptions, however, hold only in the case of the infima species.

115. We, on our part, would describe species by saying that it is a universal form existing in the soul which is abstracted (by the soul) from likenesses which it finds in existing things, and arranged under genus. It is predicated of many things that are individually different in respect of what a thing is. And with this, let us break off our discussion of the generalities of this lesson.

116. *Porphyry*: As for the species it is predicated of the form of everything, according to which it is said, "form is first worthy of King." (Understand that this must mean: as for the species it is predicated of the apparent form of everything; as it was said in the introduction: 'species' is first worthy of King, i.e., his apparent form). Species is also said of that which is arranged under the genus which we have described. (He means: the logical species which is the form existing in the soul and arranged under the logical genus, such as man which is the species of animal under which man is arranged, and triangle which is the species of figure under which it [triangle] is arranged.) It is such as we are accustomed

to say: man is a species of animal, animal being its genus, and white a species of color, and triangle a species of figure.

Commentator: In this passage Porphyry enumerates the meanings of species. He says that they are two: (a) the apparent form existing in every individual; and (b) the form which it is the business of the mind to arrange under the genus, like man arranged under animal, white under color, and triangle under figure.

117. *Porphyry*: Since when we describe the genus we make mention of species, by saying: it is that which is predicated of many things differing in species in respect of what a thing is, and we say regarding species that it is that which is arranged under the described genus. (He means: when we define genus, we make mention of species in its (genus's) definition and when we define species, we make mention of genus in its (species') definition. For, with reference to genus, we say that species is arranged under it; and, with reference to species, that it is arranged under genus.)

Commentator: This is the objection which follows for Porphyry. He explains the unknown by the unknown. We have already, in the introductory section of this lesson, explained the manner of that objection.

118. *Porphyry*: You must know that, since genus is the genus of species, and species the species of a genus, each one is (related) to the other . . . (He means: each one is related to the other, and, thus, the form of each one is mentioned in the definition of the other; since they are related, the one is not separable from the other.) . . . we must use both in the rational accounts of both. (He means in the definitions of both of them. Since they are related, each one of them is taken in the definition of the other.)

Commentator: This is the solution of the objection. We have already treated it in detail above. His statement: "each one (is related) to the other" means that the nature and meaning of each one are accomplished and understood by its rela-

tion to the other. His phrase "in the rational accounts of both" means the definitions of both genus and species. 69

119. *Porphyry*: They describe species in this way: Species is that which is arranged under genus and whose genus is predicated of it in respect of what a thing is. (He means: if it is asked about what species is, the answer would be by its genus, for species is arranged under genus. And if it is asked about what species is, the answer would be by the genus.) They describe it also in this way . . . (He means: species is described in this way.) .. . species is that which is predicated of many things differing in number in respect of what a thing is, but this description belongs only to the infima species and to that which is species only. (He means: species is that which is predicated of many things differing in number, i.e., if it is asked about what each thing is, the answer would be by the species. However, this description is appropriate for the infima species, not for the intermediates.) As for the other two descriptions they would pertain to such as are not infimae species. (He means: the intermediates for which the first two descriptions are appropriate, while the third description belongs to the infima species.)

Commentator: In this section Porphyry repeats the first description in order to show us that the objection did not shake the description, and to bring two other descriptions for the species. He maintains that two of these descriptions are appropriate for every species, while the third is appropriate for the infima species. With this let us break off our detailed discussion of this lesson.

Eleventh Lesson

120. *Porphyry*: Now what we have described would be evident in this way.

Commentator: Porphyry had divided the name of species into its meanings, and had taken the meaning which he would

discuss, and had described it in the ways we have mentioned above; he had mentioned that some of the descriptions are appropriate only to the infima species alone and he did not speak about the meaning of this term (infima species) in the early part of the book up to this point; he had also laid it down that the opposite of infima species is the summum genusafter all this he begins to inform us which of them is the summum genus, which is the infima species, and which of them are the intermediates which in relation to what are above are entitled to become species, and in relation to what are below are entitled to become genera. He explains them for us on the basis of his examination of the (Aristotelian) categories.

121. He says: If you consider each one of the categories, you would find in it three concepts: summum genus, infima species, and the intermediates. [70] Of them, the summum genus is that which has nothing higher than it, I mean, that it is the last form abstracted from things by the mind. For when the mind obtains the form of man it breaks it up into its principles, namely, animal, rational, and mortal. It breaks up animal into body which is animate, sensitive and moves at will. It breaks up body into substance, and stops with it, since substance is the most simple category. Substance is the last form abstracted from things by the mind, and it is that which they call summum genus. The infima species is the first form separated by the mind from things. And Porphyry says that it is that below which there is no other species. The intermediates are between these two forms. In relation to such of them (i.e., genus and species) as are above them (intermediates) the intermediates are entitled to become species, and to such as are below them they are entitled to become genera.

122. Porphyry turns from the clarification of this meaning by reference to the whole of the categories to a clarification by reference to the most outstanding and obvious of the categories, namely, substance. He says that substance is a summum genus. Under substance is body, under body animated body, under animated body animal, under animal rational animal, under this is man, and under man are Plato and Socrates. It is inadmissible to divide man into male and female because there are no differences between them by nature but by con-

vention, I mean, the members of the male (sex) are external, while those of the female are internal, [71] while both are defined as rational and mortal animal, receptive of learning and knowledge.

123. Substance is summum genus in this category, and man is the infima species, while the intermediates are those between the two, i.e., the (highest) genera and the (lowest) species, and are related both to such as are above and below them.

124. Several objections may be raised against Porphyry concerning this division. Firstly, we ask you to tell us, Porphyry, whether substance which you consider to be summum genus is body or not-body. If it is body, how can you predicate it of not-body? If it is not-body, how can you predicate it of that which is body? This is the solution of the objection: the expressions "body" and "not-body," and, in general all such expressions which resemble a contradiction are understood in two ways: for not-body either means the privation[72] of body, or it indicates a form which is the contrary of the form of body. If you take body and not-body with regard to substance, although both of them are two contrary forms, their potential union in it (substance) is possible; their union in actuality, however, is not; but they branch into two parts, namely, body in actuality and not-body (in actuality), because that which is an actuality comes into being from that which is a potentiality. If you take both of them as two parts of a contradiction, it is inescapable that you should, with respect to substance, take them both actually and potentially. If you take them in actuality, to affirm that they are a union is false, while to deny that is true. If you take them in potentiality, to affirm (that they are a union) is true and to deny is false. Thus in this way too, substance is a body and not-body potentially, branching into two things in actuality. This is enough for the solution of the objection.[73]

125. There is another objection which follows from Porphyry's view. It is this: how to you assert, Porphyry, that body is divisible into animate and inanimate? For, according to this, it follows necessarily that body is more general than the two (i.e., animate and inanimate), whereas it is admitted that body is part of the animate, since it (i.e., animate) is its genus. How can a part of something be more general than that

something? 74 The solution of the objection is as follows: body is examined in two aspects: qua essence, and qua universal. As essence, it is part of animate; as universal, it encompasses animate and inanimate. Porphyry used body in its sense as universal, not as essence.

126. A third objection follows necessarily. It is this: you, Porphyry, forbade us to divide species into individuals, and asserted that there is no use in dividing them. Why, then, after reaching the infima species, did you divide it, breaking it up into Socrates and Plato? The solution of the objection is this: Porphyry was not using that as a method of division, but he was merely enumerating what comes under the highest genus, and so he descended down to the individuals under the infima species. Thus, he enumerated the individuals in order to make us realize that they are different not in their nature but in their individual differences.

127. There is a fourth objection against Porphyry which is this: you were using, Porphyry, the method of division in none of its aspects. For you who instructed us to proceed, when we like, to divide the genus of the genus and to divide it by opposite differentiae into opposite species, if you considered this matter correctly you would not find why you did this (i.e., dividing into individuals). The solution of the objection is this: division was not Porphyry's intention in this context. His intention was merely to teach us which of them is the summum genus, which is the infima species, and which of them are the intermediates.

128. He mentioned from the category of substance what we need, and omitted the rest (of the categories). Furthermore, if we are to assume that he was dividing, he was right in omitting what he omitted. For it was he who promised us in the preface of this book that the teaching of the book would be easy and would avoid obscure things. For this reason, when he divided, he omitted to mention the obscure parts. Thus, he omitted the mention of not-body because it is obscure; and he omitted to mention inanimate; but he mentioned animate because of its distinctness. He mentioned animal and omitted not-animal for this (same) reason, and did the same for rational and not-rational.

129. You must know that animate is divided into animal, plant, and vegetative animal. Animal is such as man; plant is such as tree and vegetative animal is such as snail and sponge. For, in terms of the meaning of plant, these two (i.e., animal and plant) have vegetative soul, for both of them feed, grow and reproduce their kind. And, in terms of the meaning of animal, they have a feeling for likes and dislikes and also they do not lack movement in a place. Lest someone might doubt the fact that genus is not divided into three species, we say that animate is divided into animal and not-animal, and animal is divided into vegetative and perfect.

130. Plato, however, divides plants into three: (a) that which is above the ground, and (b) that which is close to it, and (c) that which is between the two. [75] The first is such as tree, the second such as grass, and the third such as wheat, and so on. As a rational immortal animal he points to the celestial bodies, because they are part of the class of body. But God Almighty is of another class, which is not body, since He is a substance which is not body.

131. After this Porphyry sets out to show with regard to the form proximate to individuals that in respect of some it is entitled to become an infima species. He constructs the syllogism as follows: If the supreme genus has a claim to this meaning because it is in the highest rank, and because it is a last form abstracted by the soul, then the form which is the first to be abstracted by the soul has a claim to become the opposite of the supreme genus. Hence, in respect of some (things), it is called the infima species and the last species since it is the opposite of the (supreme) genus.

132. After telling us about which of these is summum genus, which is infima species, and which of them are the intermediates, Porphyry begins to tell us the number of relations existing for each one of these. He says that the summum genus has only one relation, namely, its relation to what are below it. If more than one relation converge in the infima species namely, its relation to what are above it, the relation of what are above to it, and its relation to what are below it, then, in accordance with all these relations it has a claim only to be a species. The intermediates have two relations: their

relation to what are above them in virtue of which they have a claim to become species, and their relation to what are below them in virtue of which they have a claim to become genera.

133. Having done this, Porphyry takes up the description of the summum genus, the infima species, and the intermediates. He describes the summum genus in two ways: Firstly, it is that which is a genus and not a species. Secondly, it is that above which there is no higher genus, and it is a genus for the rest of the genera below it. He describes the infima species in three ways. Firstly, that is an infima species which is a species and not a genus. Secondly, it is that whose division into species is impossible. Thirdly it is that which is predicated of many things that are individually different, in respect of what a thing is.

134. Porphyry then clarifies for us which of these are the summum genus, infima species, and the intermediates in terms of the tribal genus and the categories of relations. He says: just as in the tribal genus there is a son but no son after it, and a father but no father before it, while the intermediates between are sons in relation to such as are above them but are fathers in relation to such as are below them, so there are in mental forms abstracted from many things: (a) something occupying the highest place, and that thing is the summum genus, and (b) something occupying the lowest place, and that thing is the infima species. The intermediates between them are entitled to both descriptions. The reason why Porphyry required for that explanation reference to the genera of relations is because the categories are mental forms and are invisible, whereas the genera of relations are among things visible and are evident to sense, and their use as examples is clearer in respect of meaning. Here, the discussion of the generalities of this lesson is concluded.

135. *Porphyry*: Now, what we have described would be evident . . . (He means: the summum genus, infima species, and the intermediate) . . . in this way. (He means: the way which we have explained). We say that in each category there are things most general and things most specific. (He means: that which is genus of the genus, namely, the summum genus:

and that which is species of the species, namely, the infima species.) Between the summa genera and the infimae species are other things. (He means: the intermediates which are both genera and species in relation to such as are above and are below them.)

Commentator: We must put in the place of our statement, "there are things most general," the statement: there is a thing which is a genus of the genus, since in a category the genus of the genus is oneit is so in the Syriac translations. We have said before that Porphyry's intention was to explain to us from the categories which of them are the summum genus, the infima species and the intermediates, since in what has preceded he included this in his discussion without first defining them for us.

136. *Porphyry*: The summum genus is that above which there is no genus higher than it, and the infima species is that below which there is no other species. Between the summa genera and the infimae species are things which in their own nature are both genera and species, when they are, however, compared to different things. (He means: to what are above and below them.)

Commentator: He teaches us from one category which of them is the summum genus and which of them are the infimae species and the intermediates. He says that the summum genus is a final form which the soul abstracts from things. The infima species is a first form which the soul obtains from things. The intermediates have both of the two forms: in relation to such as are above them they are called species, and in relation to such as are below them they are called genera. His statement, "when they are, however, compared to different things," means (when they are compared) to what are above and below them.

137. *Porphyry*: We must clarify what we have stated in one category. We say that substance is (also) a genus. (He means: a summum genus*). Under it is body,

*Here follow the following words: "The master, may God have mercy on him, said: 'The word "also" is that which is in the Syriac (text), but there is no need for it.'" This is a marginal note (ed.).

> under body animate body, under animate body animal, under animal rational animal, under this is man, and under man Socrates, Plato, and other individual men. But, of these, substance is the summum genus, and man the infima species. As for body it is a species of substance but a genus of animate body; animate body is a species of body but a genus of animal. Moreover, animal is a species of animate body and a genus of rational animal; and rational animal is a species of animal and a genus of man; man is a species of rational animal, but not a genus of particular men, but only a species. Everything proximate to individuals is only a species and not a genus. (No explanatory note).

Commentator: Porphyry singled out the category of substance as his example because it is the most evident and outstanding of all the categories. As for the word "also" it has no meaning (here). 76 We have already mentioned why in each part he omitted one of its extremesit was because it was not his intention to treat division exhaustively. It was his intention, however, to show us the highest and lowest extremes and the things between them in the category of substance. The reason for his calling the final species an infima species is because if you rise from it until you terminate in the summum genus, you will call everything that you encounter a species, because you examine it in relation to what are higher than it. Hence, it deserves to be called infima species, and it will be more true to say that it is so because of its nearness to the individuals. The reason for our calling the highest forms the summum genus is because there is nothing higher than it. If you descend from it to the infima species, everything that you encounter is a genus. His statement, "we say that substance is (also) a genus," means a summum genus.

138. *Porphyry*: Just as substance is the most generic because it is in the highest place and because there is nothing prior to it, so also is man, for it is only a species, the final species and the infima species, as we said, since it is a species below which there is no species, and since there is nothing in it capable

of being divided into species. On the contrary, below it are individuals, for Socrates, Alcibiades, and Plato are individuals.

Commentator: This statement must be translated in the following way: just as substance has a claim to be a summum genus and only a genus because it is in the highest place, so man has a claim to be an infima species because it is in the final (i.e., lowest) place. Porphyry's intention in this section is to show, by way of connection, what he stated, regarding the the infima species, that it is only a species and an infima species. We say: as for its being a species it is because it is arranged under a genus. It is the infima species because if you ascend you would find species only. That which is only a species is so because it is not predicated of species, but of individuals.

139. *Porphyry*: As for the intermediates they are species with regard to what are before them and genera with regard to what are after them. Therefore, they have two relations: their relation to such as are before them according to which they (i.e., the intermediates) are said to be their species; and their relation to such as are after them according to which they are said to be their genera. As for the extremes, they have one relation. For the summum genus has a relation to such as are below it, since it is the highest of all the genera, but it has no relation to anything before it since it is in the highest place and is the first principle. The infima species also has only one relation, namely, its relation to such as are above it, things of which it is the species. As to the relation to such as are below it, it is not different . . . (Understand that this means the relation is not different from species [itself]) . . . since it is also called the species of individuals in view of the fact that it comprehends them. (He means: since, on account of that relation, it is predicated of individuals). And it is called a species with regard to such as are prior, because the things that are prior to it comprehend it. (He means: it is a species according to all of the two ways.)

140. *Commentator*: Porphyry's intention in this section is to explain each of the higher and the lower forms in the soul and how many relations the intermediates are entitled (to have). He says: The highest (form) has one relation, namely, the relation of the genus; the lowest, likewise, has one relation, namely, the relation of the species, even if this relation is referred to what are below and above them. But the intermediates have two relations. You must not suppose his expression, "the first principle," to be God, may His name be exalted, but (he means) the final form obtained by the mind, and it is the summum genus. His statement, "they have two relations," means their relation to both a genus and a species. His statement, "since it is also called . . ." means since, through that relationship, the species of the individuals is a predicate because it comprehends them, i.e., species is predicated of the individuals. His statement, "it is a species with regard to such as are prior to it because things that are prior to it comprehend it," means it is a species because of both of the two ways.

141. *Porphyry*: They define the summum genus as that which being a genus is not a species, and also that above which there is no higher genus. They define the infima species as that which being a species is not a genus and which being a species it is impossible for us to divide into species, and that which is predicated of many things differing in number in reference to what a thing is. The intermediates of the two extremes, some of which are below others, they call genera, making each of them a species and a genus, relatively, when referred to different things. For these are those which, being prior to the infima species, ascend up to the summum genus; and some of them being below others are called genera and species.

Commentator: After determining which of them are the summum genus, infima species, and the intermediates, Porphyry begins to describe each one of them. He describes the summum genus in two ways, the infima species in three ways, and the intermediates in one way.

142. *Porphyry*: Thus Agamemnon is the son of Atrides, son of Pelopides, son of Tantalides and, lastly, son of Zeus.

Commentator: Here, Porphyry takes up the clarification of the summum genus, infima species, and the intermediates by making reference to the tribal genus. He makes Agamemnon stand for the infima species, Zeus for the summum genus, and the rest serve as the intermediates. What we consider to be the summum genus is Adam, and Noah the infima species, and what are between the two are the intermediaries. And, here, let us break off our detailed statement on this lesson.

Twelth Lesson

143. *Porphyry*: But in genealogies they generally rise up to one origin, such as Zeus.

Commentator: Having clarified for us what the summum genus, infima species and the intermediates are by reference, firstly, to all the categories and, secondly, by reference to the category of substance and, thirdly, by reference to the genera of genealogiesall of which genealogies generally rise to only one father, such as Zeus, as the Greeks postulate, and Adam, as posited by men of religionin order that it might not be supposed that existing things as well as mental forms also ascend to one origin and are all comprehended by one highest genus, Porphyry took up the difference between the ascent of the tribal genus and that of existing things. He says that the manner of the ascent of existing things to their origins is not the same as the ascent of the tribal genera. For only tribal genera generally ascend to one origin, namely, Zeus. Existing things, however, ascend to more than one origin, for their primary genera are ten. The reason for the addition of the word "generally," is because a section of the Greeks ascends to another father different from Zeus; he is Poseidon.

144. An objection befalls this passage. It is this: if the fact is that all tribes do not ascend to Zeus, how true, then, is the statement of Homer that Zeus is the father of all gods and men? The solution of the objection is this: the name of Zeus, according to Homer, is an equivocal name. That means that this name applies to many fathers one of whom is Poseidon.

145. We must go beyond what we are after and explain the meaning of our statement that the gods have sons, since

we often hear the poets saying this. For one might suppose that we imagine that the gods generate (sons), while it is not so. But we call some men sons of the gods because of the refinement of their ideas, the purity of their minds, their concern for things divine, and their imitation of the gods as much as possible. [77] This may happen to be the case of irrational animals, for some irrational animals are linked to the sun out of their desire to be like it; and generally everything imitating something (else) is linked to that thing on the assumption that it is identical with it.

146. Porphyry in this passage, without any explanation, lays down the statement that the principles of all existing things, I mean, the genera which comprehend them, are ten. We have explained above that it is not the business of the practitioner of a certain art to look into the existence of the principles of his art, but he merely assumes them.[78] The principles of the logical art are the simple significatory terms and the highest genera which are signified by these terms. Therefore, Porphyry here posited the principles on an assumption.

147. An objection may be raised against Porphyry. It is this: how do you maintain, Porphyry, that existing things do not ascend to one genus? We, on our part, do not doubt that all existing things ascend to Existence, for all of them do exist. Existence comprehends all of them, I mean, the genus of substance and the genera of all the accidents. We say: the ascension of all existing things to Existence does not follow the manner in which species ascend to genus, but it is an ascension of different meanings to an equivocal term. For existing things are comprehended by the generality of an equivocal term, not by the generality of nature and a (specified) genus.[79] The proof of this is, as we have explained above, that everything divisible has eight divisions.[80] The division of Existence into parts in the manner of existing things is impossible, unless it is (done) in a way by which an equivocal term is divided into its various meanings. For it is impossible for Existence to be divided like the division of genus into its species. These claims will be explained with five arguments. Before we begin with the first, let us establish a hypothesis. It is that all of these arguments necessarily follow from one hypothesis, the hypothesis of the

one who postulates that absolute existence is one nature out of which proceed all existing things.

148. The first argument is as follows: If Existence were divisible into things just as genus is divided into species, it would follow necessarily that it is a substance and an accident in one respect, namely, in respect of its being a genus and a constitutive, and this is absurd. As to how that follows, it is as follows: Existence is that which is divisible into substance and accident; substance and accident are its species. The genus belongs to each of its species. Because species is composed of genus and differentiae, Existence belongs to the species of accident and the species of substance. However, it is clear in the *Physics* [81](of Aristotle) that parts of the species of substances are substances. In the same way, parts of species of accidents must be accidents. Thus because Existence is part of the species of accident it must be accident; and because it is part of the species of substance it must be substance. Thus, Existence becomes a substance and an accident with respect to one and the same thing; and this is absurd. The addition to this is because it is impossible that the same thing be substance and accident in respect of one and the same thing, since it is possible for that same thing to be a substance and accident in two different ways and in respect of two different things, like forms in matter, for they are accidents in matter because they are not part of matter, although it is impossible that their subsistence be devoid of matter. Moreover, they (forms) are substances in the composite thing because they are part of that composite thing, for when they disappear, the composite thing also disappears. Such were the views of John Philoponus, Olympiodorus, Elias, and all the Alexandrian scholars.[82] In order that this argument might become clear to you, imagine some substance, like man, to exist, and in it a species of accident like white. Now, just as the particular accident exists in the particular substance, so the species of accident exists in the species of substance. Imagine that the genus of existing things is Existence. Thus, because white is an accident of man its genus has an accident. Thus, it is necessary for Existence to be an accident for man and because it is the genus for man, it must be his substance, for substance is a substance

for man inasmuch as it is its genus. It (Existence) should also be an accident for man, inasmuch as it is a genus of its accident. So, man is substance and accident in respect of Existence, but it is impossible that the same thing should be substance and accident in respect of one and the same thing.

149. The second argument is as follows: If existence is a genus, it would follow necessarily that the thing in which species share is that by which they are separated, and this is absurd. For Existence which is assumed a genus and a nature and not an equivocal nameis divided into substance and accident for it is a genus for both of them and is in them both, and their differentiae would, inevitably, either exist or not. If they do not exist it would follow necessarily that the essence of species is composed of that which does not exist, and this is impossible. It remains that it (i.e., the differentia) exists, i.e., outside.* Yet, species share in Existencewhich is one natureand are necessarily separated by Existence. This (Existence) is that in which species share because it is the nature of the whole of Existence, and it is not a (mere) name. So, the thing in which the species share is that by which they differ, and this is absurd. The absurdity is brought about by the view that Existence is a genus. Existence, then, is not a genus.

150. The third argument is as follows: Aristotle makes it clear in the *Categories* that species divided from one and the same genus are those whose genus is naturally one, one species not at all being found in the other. [83] If Existence is a genus of substance and accident a contradiction of this law would necessarily follow. For substances are more real than accidents on account of Existence which is a genus; and the accident is less important than substance because the former requires the latter, while substance does not require accident. You must not understand our statement to mean that substance does not need accident and that accident does not exist for it. It means, rather, that accident does not enter the condition[84] of the existence of substance. For it is impossible that substance,

*"outside, he (i.e., Ibn al-Tayyib) means." These words which are on the margin must have been added by a pupil of Ibn al-Tayyib (ed.)

especially physical substance, should be found devoid of an accident. But we say that substance does not need accident inasmuch as it is possible for the assigned accident to withdraw from substance, while the latter remainswithout the former entering its condition of existence. This being so, substance and accident are different with regard to the meaning of Existence (applied to them). Existence, then, is not a genus for the two.

151. The fourth argument is as follows: When one species disappears the disappearance of the other does not necessarily follow, for the disappearance of man does not necessarily involve the disappearance of ass. (But) when substance disappears, accident (also) disappears because accident exists in the substance. Existence, then, is not a genus for substance and accident.

152. The fifth argument is as follows: If substance and accident are posited as two species of Existence, it would follow necessarily that Nature is unfair. For it is not proper for Nature to divide two species from one genus, and make one of them subjoined to, and needing, the other with regard to the nature of that genus, while the other species is not like that. If substance and accident are two species and accident is subjoined while substance is not, it would follow necessarily that Nature acted unjustly in this act but God who organized nature made it just. [85]

153. Now, it is clear that the division of Existence into substance and accident is not the same as the division of genus into species, nor is it like the division of species into individuals. For individuals are infinite, while the number of substance and accident is finite. Yet the species exists together with its individuals whereas Existence does not exist together with substance and accident. Moreover the division of Existence is not like the division of the whole into its similar parts, since substance does not resemble accident. Nor is the division of Existence like the division of the whole into its dissimilar parts, for the parts of what is dissimilar would not correspond to the whole in its name or in its definition, like fingers and the hand. Substance and accident are agreeable with reference to the name of Existence although they differ

in respect of its definition. The division of Existence is not the same as the division of substance into accidents since one of the parts of Existence is substance;* nor is it like the division of accident into other accidents because substance and accident, although they differ regarding the meaning of Existence, they are not entraneous to it; nor is it like the division of accident into substance since one of the parts of Existence is accident.

154. It remains that the division of Existence is the division of equivocal name into its various meanings. Stephanus says: the division of Existence is not like the division of an equivocal name inasmuch as the meanings signified by an equivocal name are neither prior nor posterior. (But) substance is prior to accident. We say: that one of the two, namely substance, is prior to the other in terms of their existence and their nature, whereas in name it is not (prior). [86] For to call existing things by this name (i.e., Existence) follows the same manner.

155. Yahya (Ibn 'Adi), Matta (Ibn Yunus) and Elias, however, maintain that Existence is neither an equivocal nor a univocal name, but is a name intermediate between the two. They argue that the meaning of a univocal name requires to be one, whereas there must not be one meaning under an equivocal name. The parts of Existence are equivocal with regard to the name of Existence and to part of the meaning of Existence, and hence they are between equivocal and nonequivocal. However, this canon which is claimed by Yahya, Matta, and Elias is unknown to logic. For, with regard to names, the canons established in logic are five. That is, the names should be either equivocal, univocal, derivative, synonymous, or dissimilar. As for the intermediate between the univocal and and the equivocal, it is not known.[87] Not that objects comprehended by an equivocal name must not at all agree in meaning; rather, they must not agree in that meaning equally. For

*"The meaning of his (i.e., Ibn al-Tayyib's) statement is that Existence is not divided like the division of a substance into accidents. For instance, man is divided into black and white, and these two are accidents; one of the divisions (i.e., parts) of Existence is substance."

This is a marginal Note (ed.)

things are either different or agreeable in their meanings except that they differ through increase or decrease. [88]

156. We must not think that Porphyry himself maintained that Existence, in his own view, is an equivocal term, since his doctrine was Platonic.[89] Rather, he sets down his view according to that of Aristotle. For Plato held that the genera of existing things are five, one of which is Existence. All the commentators maintain that Existence, according to Aristotle, is an equivocal name from the point of view of logic, but a genus from the point of view of metaphysics.[90] This is a view which, if examined, would (be found to) be incorrect. For Aristotle, in the third book of the *Metaphysics*, makes it clear that Existence is an equivocal name, but it is one of the equivocal names used with intention[91] and deliberation, and one of those which proceed from one agent and desire one goal. For all existing things are called existing things because they issue from that first principle and desire to be like it. For the first principle is divine indeed and is a creator and perfecter of all existing things. Thus, all existing things desire (to be like) it.

157. After Porphyry's account and his postulate in this passage that the supreme genera are ten, he takes up the investigation of the infimae species and individuals. He states that infimae species are finite in relation to Nature but infinite in relation to us. For Aristotle, famous for his sciences, who compiled all the excellent sciences with care, and studied the cases of all animals, did not enumerate all the species of animals. But although in relation to us they (animals) are infinite they must be finite in relation to Nature. For if the species are infinite, it would follow necessarily that there exists something more than the infinite, for individuals are more than species. And if species are infinite it would necessarily follow that there exists something more than the infinite, and this is absurd. Nevertheless, all of them (species) exist, and the regeneration of a species is impossible because things that come into being necessarily issue from the celestial things whose states are the same and never change. That which renews its existence are the individuals in corruptible things, so that a second (individual) might replace the first, but the

species does not perish. That which is infinite does not exist as a whole, but only one part of it after another comes into being. Were species infinite, one thing after another would come into concrete existence from the species every day, with either the destruction or survival of the first. And if unusual species would concretely come to exist, the existing individuals would not be known, and the whole of this is impossible. All species, then, exist and exist in reality. The individuals, however, are infinite not in relation to us, but in relation to Nature. Thus, the number of things which we have discussed is three: summa genera, infimae species, and individuals; the infimae species resemble the intermediate which has the description of both, i.e., the description of the summa genera on the basis of the fact that these are finite in relation both to us and to Nature; the description of the individuals is that they are infinite in relation both to us and to Nature. The infimae species have both descriptions: finite and infinite; finite in relation to Nature, and infinite in relation to us.

158. The fact that individuals are infinite is clear from the rule of Plato, for he urges [92] dividers, when dividing, to begin from the summum genus and to divide it by opposite substantial differentiae, and, proceeding through the intermediates, to stop with the infimae species, no longer extending (the division) to the individuals.[93] The reason for his exhortation that they begin from the summum genus is because division is a multiplication of what is truly one, and what is truly one is the summum genus. The reason for his proposal that we divide by substantial differentiae is because if we divide by accidental differentiae, such as motion and rest, what is divided is not multiplied whereas the usefulness of division is multiplication. For it may happen that the same animal is in motion and at rest in two moments. As for our proceeding by the intermediates it is because when we divide, first of all, into infimae specieswhich are infinite in relation to usthe division does not benefit us in any way. For the aim of division is knowledge, whereas that which is infinite in relation both to us and to Nature is unknowable, since knowledge is the comprehension of the known, and the infinite cannot be comprehended by knowledge. With regard to Plato's exhortation that we stop

with the infimae species it is because if we divide them, we would necessarily divide them into infinites, and the infinite is unknowable; hence it is of no use to divide them.

159. Thus it is clear from the doctrine of Plato that individuals are infinite. And Porphyry made his proof from division because it is a special characteristic of the logical art since division is used in logic, and it is one of the methods valued by logic.[94] But this (fact) is not the reason why individuals are infinite, but a proof to us that they are infinite. For, the reason why individuals are infinite is that the corruption of one is the generation of the other.

160. You must not think that individuals are infinite in actuality. Aristotle does not think that the infinite exists in actuality, but in potentiality.[95] He means: individuals do not cease to be since their generation is eternal. As for individuals of the present they are finite. However, if they are supposed to be infinite and it is assumed that they would be the same on a future day and a newborn man is added to them, it would follow necessarily that something more than the infinite should exist. We, on our part, would create, from Platonic doctrine, the laws by which division is accomplished.

161. We say: that the Platonic laws which we make use of in division are four. The first is that we begin from the summum genus. Secondly, we divide by substantial differentiae according to opposites. Thirdly, we proceed by the intermediates. Fourthly, we stop with the infimae species, no longer extending the division to the individuals. The first law Plato mentions in the *Timaeus* during his discussion of the derivation of names, where he says that the name 'knowledge' is derived because it perfects our minds and improves them for the knowledge of things. For knowledge makes our minds come to the knowledge of things. Therefore, we must begin where we must, i.e., from the summum genus.

162. Plato states the second law in the *Theaetetus* where he says: "we must not be like the ignorant who have no insight, and who feel certain in situations which are not certain." We must understand this statement on the basis of the fact that he exhorts that division should take place by substantial, not accidental, differentiae. For, while the substantial differ-

entiae multiply that which is divided, the accidental are not able to multiply it.

163. Plato states the third and fourth laws [96] in the *Phaedo* where he says: "nobody should stretch his foot to a level higher than himself." He means by that that we should not, in division, descend and go beyond the infimae species, but we must stop with them. For the division of infimae species into individuals necessarily touches upon the knowledge of the infinite, and the infinite is unknowable.

164. After this, Porphyry takes up the definition of division, and since definition is opposed to division,[97] he brings the two into one relationship and defines them together. He says: division is multiplication of the one, like the multiplication of the species man by its individuals. And definition is the collection of many into one, like the collection of all the individuals of one species in the definition of their species, for all individuals unite in their species. And here we break off our discussion of the generalities of this lesson.

165. *Porphyry*: But in genealogies they generally ascend to one origin, for instance, to Zeus. (He means: but all individual men ascend to one individual, namely, Zeus, according to the hypothesis of the Greeks.) But regarding genera and species it is not the case . . . (He means: as for genera, the intermediates and the species, all of them do not ascend to one genus which is a common genus for them, but to ten genera) . . . because Existence is not one common genus for all of them, nor do they coincide in one genus which is higher than all of them, as Aristotle says. But let us suppose that the first genera, according to the *Categories*, are ten and they are ten first principles. (He means: even if genera and species ascend to Existence, it (Existence) is an equivocal name, not a genus, which embraces them. In general, there is no higher genus which embraces them; this doctrine is Aristotelian.) When a man calls them existing things he states that he calls them so equivocally, not univocally. For if Existence were the one common genus of all things, all things would be

called existing things univocally. (He means: when a man calls them by the name of Existence, he makes it general for them qua equivocal name, not qua (specific) nature, for that would be univocal.) Since the first principles are ten, the community between them is only the name . . . (Commentator: he means: since the summa genera and the first principles are ten, Existence which they all share, is a community in name and not in meaning) . . . not in the statement which the name has. (He means: not in the definition which that name has, for that would be univocal.) The summa genera, then, are ten. (He means: Since Existence is described in this way, the summa genera, then, are ten.)

166. *Commentator*: In this passage Porphyry states the difference between things and their ascension (to a genus), and between the tribal genus and its ascension (to one principle). For, having made an example of things by means of the tribal genus, in order that it might not be supposed that things resemble the tribal genus in having a principle which is the highest, and the last member which is the lowest, and the intermediates between themjust as in the *Categories* so also (in things), he compares things to the tribal genus in their ascension to one. For the tribal genus generally ascends only to one principle, for instance, Zeus. The case is not so with things, for they ascend to ten first principles which then resemble chieftains, rulers, and leaders. Thus the poet says: that which represents is not necessarily like that which is represented in all its aspects. Existence, qua equivocal general name, embraces ten principles. His reason for saying that the genera of genealogies generally ascend to one origin is because a section of the Greeks ascends to another father whom we have already mentioned in the general study of the lesson. His statement, "let us then suppose that the first principles are ten," means that we must lay that down formally. That is to be understood in two ways: it may be that he said that because it is not the business of the logician to investigate the principles of his art which are the simple terms and the highest genera, or he merely said that because of his adherence to

Plato's view. For Plato does not postulate that Existence is an equivocal name, but makes it a genus of things. His statement, "we must lay it down that the first genera are ten," means we must lay that down in accordance with the doctrine of Aristotle, not with ours, for Aristotle believes that Existence is a common name, and not a nature.

167. *Porphyry*: As for the infimae species they are found in a certain number, but they are infinite. (He means: the infimae species have a (certain) number to which they are limited.) As for the individuals which are after the infimae species they are infinite. (He means: those between which and the infimae species there is no intermediate.) Therefore, Plato urges that having come down from the summa genera to the infimae species they must abstain from them . . . (He means: they (must) stop with the infimae species, without dividing them into individuals) . . . and that their descent to the infimae species must be through the intermediates . . . (He means: their descent from the summum genus to the infima species must be through the intermediates) . . . after dividing them by differentiae which can produce species. (He means: after dividing the genera by substantial differentiae whose nature is to produce species, but not by accidental differentiae). He (Plato) says that infinite things are to be ignored, for knowledge of them is impossible. (He means: for knowledge of them is impossible. He means: for division does not touch them.)

168. *Commentator*: Having admitted that the highest genera are tenand genera are mentioned in relation to species and species in relation to individualsPorphyry takes up the examination of species and individuals. He judges that species, in relation to us, are infinite, although they are finite in relation to Nature. Individuals, however, are infinite in relation both to us and to Nature; however, the infinite is only a potentiality not an actuality. We have explained this in the general study of the lesson. He shows that individuals are infinite from the rules which Plato conveyed regarding division. For

he (Plato) urges that division must begin from the summum genus, and we divide by substantial differentiae, and, proceeding through the intermediates, we stop with the infimae species, no longer extending (our division) to individuals because they are infinite and, as such, are unknowable, whereas the usefulness of division is knowledge, and our attempt to divide them would be a useless matter.

169. *Porphyry*: When we have descended to the infimae species it is very necessary, since we are dividing, to proceed to the multitude. (He means: when, in division, we have descended to the infimae species, we must end with the multitude because the method of division is to multiply that which is to be divided.) But when we have ascended to the summa genera, it is very necessary that we collect multitude into one. (He means: we must cause the multitude to ascend and enclose it in one nature.) For species is collective of the many into one nature. (He means: it is the business of the species to collect the multitude, i.e., individuals, into one nature which is its (own) nature.) With respect to that collection the genus is much more so than it (species). (He means: the genus collects both individuals and species into one nature.) As for particular and singular things they are contrary to that (method). (He means: as for the thing that is one and singular whose division is desirable, its case with regard to division is opposite to that of definition.) Because they always divide the one into multitude. (He means: the division takes the one and branches it into many.) For many men are one man by (their) participation in one species. (He means: all individual men in their definition unite in one thing; that thing is their species.) But the one common man is many through the particulars. (He means: the common man branches out, through division, into the multitude.) For the singular is always divisible, while the common is collective. (He means: the singular thing whose division is desirable is always divisible into

multitude, while the common collects multitude when it is being defined.)

170. *Commentator*: Porphyry's aim in this passage is to describe division and definition for us, and to differentiate between them. The reason which he adduces for that is his mention of division in what has preceded, which mention is so brief that we still remain ignorant of it (division); he begins to inform us of its character. Since it is the business of every true investigator, when he mentions something which has an unknown and an indeterminate opposite, to mention that opposite and explain it accordingly, and since definition is opposed to division, Porphyry takes up its (i.e., definition's) definition also. He says: division is the multiplication of the one, while definition is the collection of the many into the one. The difference between them is evident from their definitions, since division multiplies, while definition collects. Here, we conclude our detailed statement on this lesson.

Thirteenth Lesson

171. *Porphyry*: Since we have already described genus and species . . .

Commentator: Having completed his discussion of genus and species by dividing and defining themobtaining four things out of it, namely, the summum genus, the intermediates, the infima species, and the individuals, Porphyry then takes up the relationship between some of these and the others. He informs us of the inseparable character which some of them have in relation to others. This is that the highest among them are predicated of what are below (them). But what are below are not predicated of what are above.

172. In order that this statement might become clear and evident, let us describe the matters before us by an extended line, and let us make its first point the summum genus, and after it the intermediates, and after them the infimae species, and end it with the individuals which really exist and after which there is nothing. Of these that which is above is predicated of that which is below. That which is below must not

reciprocate, for it is not predicated of that which is above. [98] Thus, the summum genus is predicated of three things, the intermediates of two things, and the infima species of one thing. The individual, however, is not predicated.

173. The reason why what is above is predicated of what is belowwithout the predication being reciprocalis that we have said several times already that the use of predication is the realization of the existence of forms in the soul and their not being made similar to the goat-stag.[99] It is known that the more hidden must be verified by the more manifest, and the most simple form in the soul is more obscure than the composite forms. The less composite form is more obscure than the more composite. In general, the closer a thing is to (real) existence the more manifest it is. For this reason the summum genus is predicated of the intermediates and the species, without reciprocation. So, we predicate genus of them because it is more obscure than they.

174. Division makes predicates be of three kinds: general, equal, and peculiar. The peculiar, however, has no subsistence, for it is impossible that something (individual) should be predicated of the species. For, we cannot say man is Socrates; nor is the species predicated of genus, for we do not say: animal is man. On the contrary it is permissible that man should be predicated of a part of animal, for this is equal (predication). The reason is, that the peculiar is not predicated of the general, for we do not predicate man of animal because of the reason stated above. Thus it is necessary that predicates whose predication is correct be of two kinds, (a) more general, like animal which is more general than man, and, in general, genus, species, and accident and, (b) that which is equal to the subject such as definitions, propria, and differentiae.[100]

175. Porphyry had finished informing us of the character of these things (i.e., genus, species, intermediates, and individuals) regarding the relation of some to the others, and had mentioned the individual which he had begun to describe, and (had mentioned) also that the genus, species, and individual are like one line; and had described genus and species. After all this, he takes up the description of the individual. He describes the individual as composed of propria and accidents

the combination of which is not found in any other individual. We would describe it in another way which is clearer than this.

176. We say: the individual is that which is composed of many things the combination of which is not found in any other individual. These things are substances, propria, and accidents. An instance of individual is Zaid or this white thing. Now, a particular accident already has existing for it a particular subject of inhesion because accidents exist in substance and do not subsist by themselves. This individual is that which can be pointed to by the finger. [101] The name "individual" includes all the individuals in the same way as an equivocal name, but it is not the same as an equivocal name which may occur anyhow, but under it (the name 'individual') there is a certain meaning which is a relation in accordance with which it is. When it is seen it is called by this name ('individual'). This relation is that the combination of the propria of each individual is not found in another, but it is that of which this individual is composed, and it is the other of which that other individual is composed. You must know that there is a difference between calling this (particular) object Zaid or individual because to describe him by these two words (i.e., Zaid and individual) is different. For we describe him insofar as he is an individual by the fact that he is composed of many things the combination of which is not found in another individual. We describe him insofar as he is Zaid by the fact that he is tall, dark-colored, scribe, son of so-and-so, and we do not do so at random and anyhow, but with purpose and deliberation. For when we call him Zaid we call him by a peculiar name. Thus it is necessary that the description connected with him be peculiar, and the peculiar description is that for which meanings are enumerated which are shared by no one else. But when we call him an individual we call him by a common name, for a description should also be common. You must understand its community in terms not of nature but of relation. And with this Porphyry concludes his discussion of genus and species, and with his conclusion of the discussion of the two predicables, we, too, break off our discussion of the generalities of this lesson.

177. *Porphyry*: Since we have already described genus and species as to what each of them is, and since

genus is one and species manyfor there is always a division of genus into many species . . . (He means: the species divided from genus are many. Their multiplication is due to the differentiae which are associated with the genus.) . . . genus is always predicated of species, and all such as are above are predicated of such as are below. (He means: the summum genus is either an intermediate or a species.) As for species it is not predicated of its proximate genus, nor of that which is above this; (he means: it is not predicated of that which is higher than it, nor that which is above this); because they do not reciprocate. (He means: because species do not reciprocate, they are not predicated of genus.) Hence it is necessary that things predicated of other things should be equal to those things predicated of them, such as the predication of neighing of horse, or that things predicated should be more general than the things of which they are predicated, such as the predication of animal of man. As for things that are less, they are not predicated of things that are more. (He means: as for things which are more specific they do not reciprocate and so are not predicated of things which are more general.) Because you cannot say that animal is man, just as you can say that man is an animal. (He means: because you cannot predicate man of animal just as you can predicate animal of man.) Those things of which species are predicated, the genus of that species is necessarily predicated, as well as the genus of that genus till you reach the summum genus; because if we could truly say that Socrates is a man, and that man is an animal, and that animal is substance, then our statement that Socrates is animal and substance is true. Since higher things are always predicated of what are below them, species is, thus, predicated of the individual, and the genus of the species and the individual. (He means: briefly, everything that is higher is predicated of that which is lower.) The summum

genus is predicated of genus, or generaif the intermediates, some of which are below others, are many, and of species and the individual. (He means: the summum genus is predicated of the subaltern genus if it is one, or the subalterns if they are many, and of the species and individuals.) For the summum genus is predicated of all the genera, species, and individuals which are under it. (He means: the subaltern genera, species, and individuals under it.) The genus which is prior to the infima species is predicated of all the species and of individuals. (He means: the subalterns are predicated of the species and the individuals under it, i.e., the species.) The species which is species alone is predicated of all the individuals. (He means: all the individuals under it.)

178. *Commentator*: In this passage Porphyry sums up his discussion of genus and species. He takes up the relationship between them, relating one to the other. He informs us of their inseparable character when they are related. He describes the matters with a line, as we said, whose first point is the summum genus, second the intermediates, third the infimae species, and fourth point the individuals. He says that everything that is higher is predicated of everything that is under it. It is impossible, however, for that which is below to reciprocate, for it is not predicated of what is above. He derives from this the number of the predicates, and he says they are two: the general predicate and the equal predicate. The peculiar predicate, however, is not admissible. For man is not predicated of animal, and if it is predicated of some part of it (animal) the predicate is an equal one.

179. *Porphyry*: The individual is predicated of one particular alone. (He means: the name, 'individual,' indicates a single specific thing and, in general, each one particular.) An instance of that which is described as individual is, Socrates, that white thing, this man approaching . . . (He means that which we call Socrates and indicate by this name, and that particular white thing) . . . as if you say: the son of

Sophronicus . . . (understand that the use of this whole addition is for particularization) . . . if Socrates alone is his son. (He means: because if he had two sons this description would fail to indicate a distinct individual.)

Commentator: Since he mentioned the individual in his discussion of the species and also, since the orderly system of things necessitates its mentionbecause we have already said that things follow the manner of a drawn line the last (point) of which is the individual, Porphyry begins to define it (individual). Before he defines it, he tells us what sort of things are indicated by the name individual. He says: the individual is that particular thing which can be pointed to by a finger; nothing is common to it with regard to the combination of the things which distinguish it.

180. *Porphyry*: Instances of these things only are called individuals because each of these is constitutive of characteristics the combination of which cannot be found to be the same, at any one time, in any other individual. (He means: each of these deserves to be called an individual because it is composed of characteristics and accidents the combination of which is not in any other individual.) For the characteristics of Socrates cannot be in any other particular person. (He means: the combination of the characteristics.) As for the characteristics of man, I mean the common man, they are the same in many men. (He means: the inseparable characteristic, due to the nature of the common man, is found in all individual men) . . . or rather in all particular men inasmuch as they are all men. (He means: this characteristic adheres to them because of their (common) species and not because they are individuals.)

Commentator: Having informed us of what the name of individual signifies, Porphyry now takes up its description. He describes it as that which is constituted by characteristics whose combination is not found in any other individual. From his statement you must understand that he means the substantial, particular, and accidental characteristics of things. The in-

terpretation of the description is as follows: the individual is that which is constituted by many substances, many propria, and many accidents the combination of which is not found in any other individual. This is what is indicated by the name, individual.

181. After stating the characteristics by which individuals are determinedand species, too, have characteristicsPorphyry takes up the distinction between characteristics existing in individuals and characteristics existing in species. He says that the characteristic of a species is found in many members (of that species), while that of the individual is found only in it. As regards his addition of "man," you must not understand it to mean that proprium is included in the definition of man and constitutes its essence, but that it is attendant upon the nature of man, and belongs to individual men in virtue, not of themselves, but of their species.

182. *Porphyry*: Species comprehends the individual, and genus comprehends the species, because genus is a certain whole, while the individual is a part, and species both a whole and a part, part of something else, and a whole not of something else, but in other things, for the whole is in its parts.

Commentator: Porphyry had described the characteristics of these three things, namely, genus, species, and individual which was what he was after, and which of them are predicated of which, and had stated that genus is predicated of species, and species of the individualthe predication not being convertible, for what is below is not predicated of what is above; he had mentioned the individual without describing ithe turns to describe it before providing what he had clarified; after all this, he began to provide for what he was after, and says: genus comprehends species, and species comprehends individual. The reason for the priority of species over genus is because species is the last with which the discussion ends. After that he describes the inseparable characteristics of each of them, and says: what characterizes the individual is the fact that it is only a part inasmuch as it is comprehended but does not comprehend. The characteristic of genus is that it comprehends, but not comprehended. As for the species its characteristic is that it both comprehends and is comprehended. It

is comprehended qua essence, and inasmuch as it is in its individualfor it is part of that individual. It comprehends qua universal, for it is inclusive of all of its individuals. His statement, "it is not a whole for another but in its parts," means that it (species) is not a whole of that of which it is a partmeaning its genus by which it is comprehended. "But a whole is in other things" means (it is part) of its individuals which it (species) comprehends; it is in them qua essence. And it is more specific than the whole if it is said regarding it (i.e., species) that it is a whole in relation to what are below it, and a part in relation to what are above it.

183. *Porphyry*: We have described the case of genus and species, and we have stated what is the summum genus, and the infima species, which things are exactly the same as genera and species, what things are individuals, and in how many ways genus and species are predicated.

Commentator: In this passage Porphyry provides for what he was after. We must understand that here he means the logical genus and the logical species, not any kind of genus and species that chances to be. Do not take his statement, "and in how many ways genus and species are predicated," (to refer to) the logical but absolute (genus and species). And here let us conclude our discussion of the thirteenth lesson.

Fourteenth Lesson
(The Differentia)

184. *Porphyry*: As for differentia it is predicated commonly, peculiarly and more peculiarly.

Commentator: After completing the consideration of genus and species, Porphyry then takes up the consideration of the differentia. The reason for his following the discussion of the species with that of differentiawhy he should have done the oppositeis because the differentia is simpler than the species. This will be shown by a number of arguments. Firstly, genus and species are predicated in respect of what a thing is, while differentia, accident, and proprium are predicated in

respect of what sort a thing is of. So, he considers each of them separately and by itself. Having examined things which are predicated in respect of what a thing is, he returns to examine things predicated in respect of what sort a thing is of. He gives differentia priority over proprium and accident because it is substantial, while the two are extraneous.

185. The second argument is as follows: genus and species resemble a subject, while differentia, proprium, and accident resemble something that inscribes and gives a form. After finishing the discussion of things which are subjects, he takes up the discussion of things that give some form. He discusses differentia first because it is a substantial giver of form.

186. The third argument is as follows: genus and species resemble two starting points and principles, while differentia resembles an intermediate because genus is prior and is inscribed through differentia; and species proceeds from it (differentia). [102]

187. Having completed the discussion of the two starting points, Porphyry takes up the intermediate.[103] He, as usual, divides the name differentia into its meanings. He takes the meaning which he wants to discuss and defines it. He maintains that the name differentia is applied in three ways: it is applied to the common differentia which consists of the separable accidents existing in a thing, such as sitting and standing; the proper differentia which consists of inseparable accidents existing in a thing, such as the hookedness (of the nose), and the blueness (of the eyes); and the most proper differentia, such as the differentiae which are constitutive of the species, like rational for man, and irrational for ass. We must discuss why the types of the differentia are three, neither more nor less, and the reason for calling one of them common, and another proper, and the third most proper.

188. We say: the reason why the types of the differentia are three is because the differentia is something by which distinction between things occurs; and the distinction occurs between things by means of form, not of matter.[104] Forms which exist in things are of three kinds: (a) substantial, namely, those (forms) of which the essence of the differentia is constituted; (b) inherently peculiar, namely, those (forms) which

are not separable from the existence of a thing, like laughter for man, and blackness for crow; (c) accidental, namely, those (forms) which are separable in the existence of that thing, like sitting and standing. The substantial are those forms of which the essence of that thing is constituted. The peculiar forms are extraneous to the thing; they are not, however, separable in the existence of the thing nor do they extend to another species. The accidental forms are extraneous to the thing, but are separable from it and go beyond it. Since the forms existing in a thing are somewhat three, it is necessary that the differentiae should be three, neither more nor less.

189. The reason why he called the differentiae taken from separable accidents like sitting and standing common differentiae is because they do not particularize one individual, but just as Zaid is distinguished from 'Amr by sittingsince he was sitting and 'Amr was standingso 'Amr, on another occasion, would be distinguished from Zaid by the differentia by which Zaid was distinguished from him, and that differentia is sitting. The common differentia is of two kinds because the separable accidents are of two kinds. For, some are stable and a thing is called on account of them because they are stable, such as youthfulness and old age. Others are not stable and nothing is named on account of them, like sitting and standing, because of the rapidity of their disappearance. The elimination of the common differentia in reality and in thought is possible. The reason is, that sitting which exists in Zaid can disappear from him, if he wants, in reality and in thought, because the elimination in thought is possible, while the nature of Zaid remains. Some individiuals are distinguished from others only by these differentiae.

190. The inseparable accidents are called proper differentiae because their elimination in reality is not easy, though it is easy in thought. This is because one can conceive the disappearance of blackness from the crow, while the crow remains. Instances of these differentiae are crookedness (of the nose), blueness (of the eyes) and the scar of a festering wound. That which is of this kindsuch as laughteris one of the propria of the species (man). For all individuals and species are distinguished by it (the proper differentia). Thus, the in-

dividual man is distinguished from the individual ass by laughter, and likewise the species man from the species ass.

191. As for the substantial differentiae, i.e., the differentiae that are creative of a species, they are called most proper because it (i.e., the most proper) can be eliminated neither in reality nor in thought without its essence being destroyed, for if the elimination of the differentiae is possible in thought, the form of that thing would disappear from it. Instances of these (substantial differentiae) are rationality in man, hotness in fire, and dryness of earth. For, if the elimination of these differentiae is conceivable in the soul, the essence of that thing would disappear from it. They are called "creative of species" because, when a genus is imprinted with them a species is produced, as well as another (sortal) nature. Only by these differentiae are species primarily distinguished, and through the species, individuals (also). For the differentia exists primarily in species, and through the species, in the individual.

192. After this, Porphyry states what are common and different among these three types (of the differentia). He says: they are common in that they differentiate between things, making some of them different from others. The difference among them is that although the substantial differentiae cause difference in things, they (also) produce species, for when the genus is inscribed with them a species is produced. Thus, rationality distinguishes the rational from the irrational. And when animal is inscribed with it, the nature, i.e., of a rational thing, results from the two together. The common and the proper differentiae, however, produce change only. For through blackness, whiteness, motion, rest, hookedness (of the nose), and blueness (of the eyes) Zaid only becomes different from 'Amr, and with the production of these differentiae in Zaid or 'Amr no other (sortal) nature different from Zaid is produced, and he ('Amr) is not made different from Zaid because of these differentiae, but he changes in his accidents, while the essence of Zaid remains the same in respect of reality.

193. After stating what are common and different (among the three differentiae), Porphyry goes on to single out, from

among the three meanings he has enumerated for the differentia, that meaning which he wants to consider. He says that the differentia which the logician considers is the substantial differentia, because the aim of the logician concerns the substantial differentia, as it is the aim of the logician to correct the four dialectical methods, namely, division, definition, demonstration, and analysis. [105] Division, as Plato stated, is made by means of substantial differentiae; definition is composed of these differentiae; true demonstration is made by means of differentiae; and so is analysis. The concern of the logician, then, must be for the (substantial) differentia, and not any other (type of differentia). If he uses the proper differentiae, due to lack of the substantial, that would be out of (sheer) necessity. If, by this he substituted description for definition and reasoning for demonstration, he would make the middle (term) substantial and accidental.

194. After Porphyry's division of the differentia into the meanings which we have enumerated, and after determining the meaning which he wants to consider, he takes up the division of the differentia in another (i.e., a second) way. The reason for his division has a second impulse. For if what the second division contained was that which the first contained, then in the second division he limits its kinds or their opposites to the first two kinds. In it he follows the canonic method of division. In the first (division) he enumerates it, and divides the differentia into separable and inseparable. Instances of the separable differentia are health, sickness, motion, and rest. He divides the inseparable into substantial and nonsubstantial. An instance of the substantial is rational, and of the nonsubstantial and accidental hookedness and flatness (of the nose).

195. After this division Porphyry takes up the differentiation between the inseparable substantial and the inseparable accidental differentia. He differentiates between them in three ways. Firstly, the substantial differentia is involved in the definition, while the accidental inseparable is not. Secondly, the substantial differentia produces another thing, i.e., if a genus is inscribed with it, another (sortal) nature is produced from it; but the accidental differentia does not produce another

thing, i.e., if something is inscribed with it, no other (sortal) nature is produced from it, but the nature of that thing remains (as it is), and its own existing essence comes from its (existing) nature. Thirdly, the substantial differentiaand, in general, all substantial things of which the nature of something is constituteddoes not admit of variation of degree. [106] The reason for this is that the intention of Nature in all individuals is one and the same. And if Nature is of this description, it follows necessarily that it does not admit of variation of degree. The reason why the intention of Nature is one and the same is because it is not a deliberator. Hence, it does not increase and decrease, but it is characterized by one and the same thing, as Galen said. He said: in everything Nature aims at one and the same thing, for increase and decrease occur in respect of the acts of those who deliberate. The acts of Nature differ according to the difference of the instruments. As for the forms that are not intended, they increase and decrease in themselves and in their acts. For what are not primarily intended by Nature are followed by accidents which result from the complexion of the proximate matter: they, it is, which differ. It is necessary that there should be difference with regard to accidents, and, in general, (there should be) increase and decrease in themselves and in their acts.[107]

196. Porphyry divides the substantial differentiae into constitutive and divisive. The divisive are those through which the division of genus into species takes place. The constitutive are those by which what are divided become species. The divisive differentiae are such as rational and irrational, mortal and immortal. Generally, the divisive differentiae are those which we use according to the way of opposition. For, when we use them in this way, all that are to be divided are included in them and none of them is excluded. As for the constitutive, they are such as rational and mortal, and irrational and immortal, and the immortal rational and the immortal irrational, such as Plato observes regarding the demons existing in the atmosphere; except that the composition of this union is not permitted by Nature, for Nature does not associate evil form with excellent matter. But this is not the place for its explanation. It must not be thought that the constitutive differentiae

are different from the divisive differentiae; on the contrary, both are in the same subject, but they are different in definition. For the divisive differentia is in itself constitutive, like rational, except that when we use a divider for animal we call it a divisive; and when we take it as constitutive of man we call it constitutive; in relation to genus, it is a divider, and in relation to species, it is constitutive.

197. After this, on account of the division of the differentia, Porphyry repeats the second division in which the differentia was divided into separable and inseparable, and mentions the kind (of differentia) which the logician discusses. He says that it is the substantial differentia. In what has preceded, we have already furnished the reason for that. With our detailed treatment of the division of the name, differentia, and the specification of the meaning into which it is the business of the logician to investigate, we break off the discussion of the generalities of this lesson.

198. *Porphyry*: As for the differentia it is predicated commonly, properly and most properly.

Commentator: Porphyry begins his discussion of the differentia by first enumerating, according to his custom, the meanings designated by the name 'differentia.' He says that they are three: common, i.e., separable accident, the proper, i.e., inseparable accident, and the most proper, i.e., substantial differentia.

199. *Porphyry*: Because it is said of something that it differs from another by a common differentia when it differs from itself or from something else . . . (He means: it is said of something that it is different from something else by a differentia which is common to both of them, but on two occasions. For just as one of them is different from the other on a certain occasion, so the other would be different from that one on another occasion) . . . with any diverse nature. (He means by differentia any differentia that is). For Socrates differs from Plato in diversity of nature . . . (He means: in respect of a certain differentia) . . . and differs also from himself when he was a boy and then became a man, and

when he does something and stops. (He means: from the first condition he differs when he turned to the second condition). And always (it is so) in the different situations. (He means: a difference is produced between something and itself, and between it and another thing.)

200. *Commentator*: Porphyry takes up the discussion of the common differentia. He says that the common differentia is that which differentiates between either two things or between a thing and itself. As for the difference from another thing it is like the difference between Socrates and Plato in sitting, standing, or (doing) something else. Plato would differ from Socrates by that (state), but on another occasion. The difference from himself is like when he, being a boy, becomes a man. [108]

201. An objection may be raised regarding this passage. It is as follows: How can a thing differ from itself by a common differentia? The common is what may occur between at least two things, while the difference only occurs between the thing and itself. The solution of the objection is as follows: The differentiae by which Zaid differs from himself are, for example: if he was a boy and became a man; this is common to him and to all men. For if nothing occurs which occasions their destruction, it is inevitable that these two conditions would change for all individual men; these differentiae then are common, not proper. The words, "because it," connect the second passage to the first. The interpretation of the statement is this: the differentia is used in three senses. The reason for this is because some differentiae are common such as those mentioned in this passage, others are proper and most proper such as those he will mention later.

202. *Porphyry*: it is said of a thing that it differs from another by a proper differentia when it differs from it by an inseparable accident such as hookedness (of the nose), blueness (of the eyes), and the scar of a festering wound.

Commentator: This is the second of the meanings designated by (the name) 'differentia.' This is (called) proper because it does not disappear in reality, but in thought.

203. *Porphyry*: A thing is said to differ from another by a most proper differentia when it differs from it by a differentia which is creative of a species . . . (He means: by a substantial differentia. This is that which when it is added to the genus produces a species) . . . as man. For man differs from horse by a species-producing differentia, i.e., by the nature of rationality. (He means: when the nature of rationality is added to animal it produces man.)

Commentator: This is the third of the meanings of differentia. It is that which is creative of another (i.e., species) and it is that whose disappearance is impossible both in reality and in thought, except with the destruction of the essence of the thing of which it is the differentia.

204. *Porphyry*: Generally, then, every differentia produces a difference in something in which it exists. (He means: it is the nature of differentia that by it some things are differentiated from others.)

Commentator: This is the common quality between the three types (of differentia).

205. *Porphyry*: Except that the common and proper differentiae make something of another quality; (He means: the common and proper differentiae produce a difference between things while their essences are preserved) while the most proper differentia makes a thing another thing. (He means: it produces another (sortal) nature different from the nature of the thing which is inscribed with that differentia.) Thus, of differentiae some make a thing of another quality, while others make it another thing. (He means: of them, some produce otherness, while others produce another (sortal) nature.) Those which produce another thing are called speciesproducing differentiae. (He means: because if they are added to the genus they produce species.) Those which make a thing of another quality are called differentiae, simply. (He means: since it is their nature merely to produce differences between things.) Because if the differentia, rational, is added

to animal it makes it another thing, and makes a species of animal. (He means: the species man.) As for the differentia of movement added to animal, it only makes it different in quality. (He means: the nature of animal remains; no other (sortal) nature is made by means of rest.)

206. *Commentator*: After stating the communities between the differentiae, he states the differences. He says that the common and the proper differentiae produce only changes in things while the essences of these things remain. For this reason he calls them mere differentiae, i.e., they do not do anything more than the act of differentiation, which is differentiating between two or more things. The most proper differentia produces a difference and another nature, for rational or mortal, although it makes man not-ass if it is added to animal, the nature (of the concept) of animal does not remain what it is essentially, but it (rational or mortal) makes it another nature, namely, the species man.

207. *Porphyry*: Of differentiae, then, some make a thing another, others make it only of a quality. (He means: of differentiae, some produce otherness (of quality), while others produce another nature.) The division of genera into species arises through the differentiae which make a thing another. (He means: the substantial differentiae.) And through them definitions are made complete since definitions are composed of genus and such differentiae. (He means: the composition of definition is made complete through them since definitions are composed of genus and the substantial differentiae.) As to the differentiae which make a thing different in quality, only diversity as well as changes of situations are produced from them. (He means: the essences of the things are preserved.)

208. *Commentator*: After enumerating the meanings of the differentia and intimating to us their communities and differences, Porphyry now sets about informing us about which of these meanings is made use of by the logician. He says: of the three differentiae, it is the substantial. The reason for

this is that the aim of the logician consists in the art of defining, dividing, analyzing, and demonstrating. These use only the substantial, not the accidental, differentiae. As for the accidental differentiae, and particularly the separable ones, they are not necessary for logic. However, the logician may often resort to the inseparable differentiae in descriptions when definitions are not available.

209. *Porphyry*: We must, again, begin from above, and I say: of differentiae some are separable, others inseparable. Thus motion, rest, to be healthy, to be sick, and such as resemble these are separable differentiae. To be hooked, flat (of nose), rational and irrational, however, are inseparable differentiae. (He means: we must go back and divide the differentia in another way. He says that of differentiae some are separable like sitting and standing, others are inseparable. Of the latter, some are substantial and accidental.) Of the inseparable, some exist in virtue of themselves, others exist as accidents. (He means: some are essential, others are accidental.) For rational exists per se for man; so also are mortal and receptive of knowledge. (He means: because they are taken in the definition of man.) As for hookedness and flatness they exist accidentally, not per se. (He means: for these are accidental, not per se, because they do not enter in definition.)

210. *Commentator*: This is the second division the usefulness of which we have already made note of in the general study of the lesson. This division is that by which the differentia is divided into separable and inseparable. By the first (division) the differentia was divided into common, proper, and most proper. The separable are accidents which may disappear in reality and in thought. The inseparable are divisible (into two). Some are substantial, namely, those which constitute the essence of a thing, like rational, mortal, and receptive of knowledge. For being receptive of knowledge is a faculty existing in man which makes possible the derivation of knowledge and its utilization. But the inseparable accidental differentiae are

those whose disappearance, we said, is possible only in thought, such as flatness and hookedness (of the nose). The meaning of his statement, "we begin from above," is to divide the differentia by another division.

211. *Porphyry*: Those which exist, per se, in a thing are found in the definition of substance and produce a different thing. (He means: It is the nature of the differentiae which exist in virtue of themselves to be involved in the definition and to produce a species, as well as another (sortal) nature, when they are added to the genus.) As for the accidental they are not found in the definition of substance, nor do they effect a different thing; on the contrary, they render a thing of another quality only. (He means: as for the accidental differentiae they do not enter in the definition, nor do they effect another nature (thing); on the contrary, they cause changes among things.) Those which exist per se do not admit of variation of degree. The accidental, however, admit of variation of degree . . . (He means: the essential differentiae are present to that which they are present to in the same manner without variation of degree.) . . . even if they are inseparable. (He means: such as the blackness of the crow and the whiteness of the swan.) For genus is neither more and less predicated of that of which it is the genus, nor are the differentiae of genus by which it (genus) is divided. (He means: nor the substantial differentiae by which the genus is divided.) Because these differentiae are those which complete the definition of each thing, and exist exactly the same in each thing without admitting variation of degree. (He means: as for the accidental differentiae they admit of variation of degree.)

212. *Commentator*: After Porphyry's division of the inseparable into accidental and substantial, both sharing the common characteristic of being inseparable, he takes up the differences between them, and states three differences. Firstly, the substantial is involved in the definition, while the accidental is

not. Secondly, the substantial produces another thing, while the accidental produces difference in quality. Thirdly, the substantialand, in general, all substantial thingsdo not admit of variation of degree, while the accidental admit of variation of degree. We have already, in the general study of the lesson, explained the reason why substantial attributes do not admit of variation of degree, while accidental attributes do.

213. *Porphyry*: Since we find three kinds of differentia, some of which are separable, and others inseparable. (He means: Since the kinds of differentia are the common, the proper, and the most proper, they are reduced to two, separable and inseparable.) Of the inseparable also, some are per se, and others accidental. (He means: some of them are essential and others accidental.) Moreover, of the differentiae per se, some are those by which genera are divided into species, and others are those by which the divided things become species. Instances of those differentiae which exist in animal per se are animate and sensitive, rational and irrational, mortal and immortal; the differentiae, animate and sensitive, constitute the essence of animal because it is an animate and sensitive substance. (He means: some (of the substantial differentiae) divide genera, others such as animate and sensitive constitute the species for both are constitutive, whereas rational and irrational are dividers.) As for the differentiae mortal and immortal, rational and irrational, they are the divisive differentiae of animal, because they divide genera into species. (He means: because they divide genus into its species.) Yet these differentiae which divide genera are completive and constitutive of species, because animal is divided by the differentiae, rational and irrational, and again, by the differentiae, mortal and immortal; but the differentiae, mortal and rational, are constitutive of man, while those of rational and immortal are constitutive of the angels and those of irrational and mortal are constitutive of irrational animals. (He means: If

these differentiae are taken in one way they are constitutive; in another way they are divisive. When the differentia is taken with its opposite it is divisive; and when it is taken with its substrata [109] it is constitutive.)

214. *Commentator*: After dividing the inseparable differentia into accidental and substantial, Porphyry takes up the division of the substantial into divisive and constitutive. He brings for each kind some examples. The divisive differentiae are those which exist according to the way of opposition, for instance rational and irrational. The constitutive differentiae are those existing according to the way of composition, for instance rational and mortal. We have already said that the constitutive is a divisive existing in a subject, but the two are described as different. For the description of the divisive is that it is that which differentiates between the species which are under the same genus. The constitutive is that which when added to the genus produces a species; while both of them are essential. The constitutive is essential for the species, while the divisive is essential for the genus.

215. Yet in this meaning both are different because essence is of two kinds: (a) essence is that thing which is found in the definition of its subject, such as rational and mortal which are found in the definition of man. (b) It is that thing whose subject is found in its definition; this, indeed, is an accident, but it is called an essential accident because whenever we find it we take its subject (as existing) in its definition, for instance, number with regard to a pair and the singular, and the nose in the definition of flatness (of the nose), and genus in the definition of divisive differentiae. The constitutive differentiae are essentially of the first kind inasmuch as they are taken in the definition of species, while the divisive differentiae are essentially of the second kind because their genus is that which is taken in their definition.[110] Porphyry omitted to mention the irrational and the immortal, though division requires such a mention, because Nature does not allow the combination of these two (i.e., irrational and immortal).

216. *Porphyry*: In like manner, also since the highest substance has differentiae which divide it, namely,

> animate and inanimate, sensitive and insensitive, . . . (He means: the substance which is a high genus) . . . animate and sensitive when they occur with substance produce animal. (He means: when they are added to substance.) Since the same differentiae taken in one way are constitutive . . . (He means: if one of them is taken together with that with which it is associated) . . . but, taken in another way, divisive . . . (He means: if one of them is taken with its opposite, all of them would be constitutive as well as divisive) . . . they are all called species-producing differentiae.

Commentator: You must not think that this example is a repetition and is of no use. For when he brought the previous example, he stated the constitutive differentiae (of animal), such as animate and sensitive, and the divisive differentiae, such as rational and irrational, otherwise someone might think that the constitutive differentia is, in all respects, not divisive. He stated this exampleand in it the same constitutive and the divisive differentiaein order to teach us that the constitutive differentiae are the divisive ones (existing) in a subject. And to the one who asks, "Why did he not do this first?", we would say: the reason why he did not do that first is because he alleged (then) that the constitutive differentiae are not divisive. He brought an example in order to clarify that point with it. In order that he might clarify that point properly, he mentioned some of them as constitutive and others as divisive, so that the difference might become clear in the mind. If he had mentioned them just as (when) he mentioned the two (differentiae) in the second example, it would not have become clear.

217. *Porphyry*: The need for both the division of genera and for definitions requires only these differentiae in particular . . . (He means: it requires the essential differentiae) . . . not the inseparable differentiae which are accidental. (He means: because these are extraneous to a thing and do not form part of its essence) and it is more proper for definitions to ignore the separable (differentia). (He means: because these are very remote from the essence of a thing.)

Commentator: After dividing, according to the second (kind of) division, the differentia into separable, inseparable accidental, and inseparable substantial, Porphyry begins to specify the one (meaning) which he wants to consider. This is the inseparable substantial because division is accomplished through it and definition is composed of it. For definition is not composed of the inseparable accidental, nor is that which is to be divided multiplied through it, and likewise the separable. Moreover, the separable disappears while definition is constant and permanent. Here, let us conclude our detailed statement on this lesson.

Fifteenth Lesson

218. *Porphyry*: And defining these differentiae, they say that the differentia is that by which species exceeds genus.

Commentator: Having completed the division of the differentia into the meanings into which it is divided, and having singled out the meaning which he wishes to considernamely, the substantial differentia, Porphyry now takes up its description. Because the differentia has many relations to the genus and the specieswhich relations had to be described in many ways, the first description is that which says that the differentia is that by which species exceeds [111] genus, such as rational by which man exceeds animal.

219. There occurs an objection as to this passage, of this form: how do you allow, Porphyry, that species exceeds genus while you have just described the genus as that comprehensive of many species? That which comprehends many things exceeds each one of them. The solution of the objection is this: species and genus are considered in two ways, (a) inasmuch as both are essences, and (b) as general and specific. On this showing, genus exceeds species inasmuch as it (genus) is general, while species exceeds genus inasmuch as it (species) is an essence, since genus is one of the things of which the definition of the species is composed. This is adequate for the solution of the objection.

220. Porphyry raises an objection as to this description (of the differentia). It is this: it is inevitable that the differentiae by which the species exceeds the genus had either existed or not in the genus before the generation of the species from it. If they did not exist in it how are they generated when the genus branches out into the species? For it was established by the ancients that it is impossible for a thing to be generated out of no-thing. [112] Neither in existence nor in thought does a thing come out of no-thing unless it comes to be from a thing which the mind imagines to have been a substratum out of which the thing comes to be. Thus the works of the mind resemble the works of Nature. If the differentiae exist in the genusand they are opposites like rational and irrationalthe combination of opposites in one and the same thing would necessarily follow; and this is impossible.

221. Porphyry solves this objection in this manner: differentiae exist in genera while genera do not exist in differentiae. The existence of differentiae in genera is, however, potential, while their nonexistence is actual. This is because, before the division of animal there was in it neither rational nor irrational in actuality, but animal was naturally disposed to receive both (i.e., rational and irrational) which are in it in potentiality. When the mind divides animal into rational and irrational, it pictures it with them (differentiae) in actuality. For each of the two opposites exists in a species which is different from that in which the other (opposite) exists. It is the doctrine of the Peripatetics that Porphyry is presenting, for this was the view of Aristotle and his disciples, i.e., that differentiae exist in genera not in actuality, but in potentiality, because genus resembles matter in which opposites exist in potentiality.[113] And when a composite issues from it (matter), the latter emerges as actual. Thus is solved the objection which says that differentiae are generated from no-thing prior to them, since they are only generated from something in which they exist in potentiality, that something being genus out of which species is generated. And it is solved the objection which says that if they (differentiae) exist in actuality the combination of two opposites (in the same thing) follows necessarily since their combination is only potential not actual, and there is no denying that they do combine in potentiality within their

material substratum. What is deniable is the fact that they combine in it in actuality.

222. Porphyry, on his part, does not hold this view (of the Aristotelians) since he was a Platonist. For Plato held that opposite differentiae do exist in genus in actuality. He (Plato) says that the combination of opposites is only deniable when it takes place in a physical matter; opposites are natural forms. If the genus is an intelligible matter, [114] however, the opposites which combine in it are merely spiritual, imaginary, and intelligible. And it is undeniable that in a spiritual sense two opposites would combine in actuality in one and the same thing.[115] For in the air which exists between black and white the two colorsblack and whitecombine together. Were the admission by the air of the two colors physical, it would be impossible for them to combine in it, but since its admission is spiritual, their combination is possible. Likewise, the eye, for it perceives both black and white since its perception, according to Aristotle's explanation in the *De Anima*, is a spiritual, not physical, perception.[116] This is the first description (of the differentia).

223. The second description is that which says that the differentia is that which is predicated of many things differing in species in respect of what sort a thing is of. The reason why it is correct that the answer to the question, of what sort?, is made by the differentia is that it distinguishes, and the answer to the question, of what sort?, requires something that distinguishes. It is necessary, then, that this question, of what sort?, be answered by the differentia.

224. An objection may arise as to this description, and it is of this form: what is the reason why species which is remote from the genus has come to answer the question in respect of what a thing is, while differentia which is closer to the genus answers the question in respect of what sort a thing is of? This is the way to solve the objection: the reason why species is analogous to genus as regards this meaning is that the statement about both genus and species is identical, in that both give their names and definitions to such as are under them, and both are like the basis and the beginning of something and are (each) a substratum. But the differentia, like rational,

does not do that by itself. For man is not called by the name of rationality, nor is he defined by its definition: it (differentia) is only predicated after its genus has been joined with it, and then "rational" would be properly predicated. This suffices for the solution of this objection.

225. A second objection may arise from the description. It is this: why does Porphyry allow that the differentia is predicated in respect of what sort a thing is of, in spite of his knowledge that Aristotle held that definitions are predicated of the definienda in respect of what the things are, and definition is composed of the genus and the differentia? How is it possible that the totality of the definition is predicated in respect of what a thing is, while its part is predicated in respect of what sort a thing is of? [117] The solution of the objection runs as follows: if the differentia is taken singly it resembles an inscriber for the genus, and the answer to the question, what sort of species of the genus is there?, is given by its inscriber. However, when the differentia is added to the genus and a species results from the combination, the rank of the combination obtains the rank of the genus. For just as the genus is a substratum for the species, so is the species, as a whole, a substratum for the individual. And just as the genus is described in respect of what a thing is, so the species is so (described) because the totality of the nature of species is a basis for the individual, just as the genus is a basis for the species. What holds for species if taken singly is not what holds if taken collectively. For if taken singly some would be subject and inscriber; if taken collectively they would be subjects only.

226. A third objection may arise out of the description. It is this: how does Porphyry allow the description of the differentia to be that which is predicated of many things differing in species in respect of what sort a thing is of? And he described the accident in this way also. What, then, is the difference between differentia and accident? We say that the differentia is described as that which is predicated of many things differing in species in respect of what sort a thing is of, while it is essential to the thing. As for accident it is extraneous. This is the difference between the two.

227. The third description is that which says that the dif-

ferentia is that whose nature it is to differentiate between such things as are under the same genus, such as rational and irrational, for both of them distinguish the species under animal. Yahya (Ibn 'Adi), however, maintained that this description requires an addition which is that differentiae are the things which distinguish between the things under the same genus and are substantial to those things, and the species enclosed by that same genus are distinguished also by the accidents and propria. You must know that different things are of two kinds: (a) those which differ by their own essences, such as substance and quantity, and (b) those which differ not by their own essences; these differ by differentiae. Thus, between things which differ by differentiae there must be a certain community, and these are those things enclosed by the same genus. They share in that genus, while they differ by differentiae.

228. The fourth description is this: the differentia is that by which such things, which do not differ in genus, differ. This description is almost the same as the preceding one. Commentators, however, maintain that this resembles the previous explanation.

229. The fifth description, which is the true description, is as follows: the differentia is that which distinguishes between things under the same genus; it is part of the things, substantial to them, constitutive of their essences, and are taken in their definitions. For of existing differentiae some are those which are extraneous, and others which are substantial. An instance of the extraneous is (the ability) to sail, for (the ability) to sail is not substantial to man and does not constitute his essence, but it is a potentiality which exists in man and makes him peculiar from among other animals. The substantial are those which constitute the essence of the thing and enter into its definition. As for those (i.e., the extraneous) they do not (enter into the definition). The reason is that the substantial differentiae are faculties [118] existing in the rational soul and are substantial to man, or that man has a disposition[119] to receive them before they (actually) occur. And with this our discussion of the general study of this lesson is concluded.

230. *Porphyry*: Defining these differentiae . . . (he means: the substantial) . . . they say that the differentia is

that by which species exceeds genus. (He means: species is composed of genus and differentia, and its preeminence over genus is through the differentia. Species exceeds genus inasmuch as it is an essence.) For man has something by which he exceeds animal, that thing being rational and mortal. (He means: because by the relation of these two to genus, the nature of species is constituted.) Because animal is neither one of these. (He means: differentiae do not exist in animal in actuality but in potentiality. When animal admits both, it becomes rational and mortal in actuality and out of it species is generated.)

Commentator: This is the first of the descriptions of the differentia, and it is so inasmuch as the differentia is an essence. Here he means by differentiae the substantial differentiae, since these are those Porphyry singled out to consider.

231. *Porphyry*: Otherwise whence would species acquire differentiae? (He means: if the differentiae are not in the genus, from what would species come to be, and how would these differentiae come about and come to exist in the species? And how would the mind imagine that, since it is impossible that something should come to be out of no-thing, this being inconceivable?) Nor has it all the opposite differentiae. (He means: there are no opposite differentiae within the genus because two opposites do not combine together in actuality in a thing.) Otherwise the same thing would have opposite differentiae at the same time. (He means: in actuality.)

Commentator: This is an objection raised by this description. It is this: it is inevitable that the differentiae of the species had either existed in the genus or had not. If they existed, it follows necessarily that there should be a combination of opposites in one and the same thing at the same time. If they did not exist whence would they come to exist in the species, since they did not exist in the same thing? It would follow from this that a thing that is would come from not-being. Differentiae do not exist in genus, but when the genus is divided they come to be in it.

232. *Porphyry*: But it contains all the differentiae which are under it in potentiality, according to what they held, but not one of them in actuality. (He means: but the genus contains the divisive differentiae which are under it in potentiality as was held by the Peripatetics, and not in actuality. For the differentiae which exist in a thing in actuality are the constitutive, not the divisive). In this way nothing comes from not-being. (He means: the existence of differentiae in genus is potential; things that come from nothing do not exist. But that which exists exists in actuality from something which existed in potentiality.) Nor would opposites exist at the same time in the same thing. (He means: in actuality, because their existence in genus is in potentiality.)

Commentator: This is the solution of the objection. It is that differentiae exist in genus in potentiality, not in actuality. And since they exist in potentiality, nothing comes from not-being, but from being in potentiality, not being in actuality. Thus, it is the system of nature that that which is in actuality comes to be from its existence in potentiality. There would not be two opposites at the same time in the same thing, since their combination in the genus is in potentiality, not actuality. And it is not absurd that two opposites should combine in potentiality, it is only absurd that they should combine in actuality. As to Porphyry's statement, "according to what they held," he means Aristotle and his disciples, since he (Porphyry) was a Platonist.

233. *Porphyry*: Again, they define differentia in this way. (He means: what he has mentioned.) The differentia is that which is predicated of many things differing in species in reference to what sort a thing is of. (He means: if it is asked about one of the things for which it exists, i.e., what sort of thing it is, the answer would be by means of the differentia.) Because rational and mortal are predicated of man, he is spoken of, through them, in reference to what sort of thing he is, and not in reference to what he is. (He means: because the two are his differentiae.) For when we

are asked what man is, it is proper that we answer that he is an animal. And when we are asked what sort of animal he is, it is proper that we describe him as rational and mortal. (He means: because these are his separating and distinguishing qualities.) For things are composed of matter and form, or of things whose constitution is analogous to matter and form. (He means: just as genus and differentia exist in imaginary objects, and matter and form in natural and artificial things.) So, just as the statue is composed of matter, i.e., brass, and of form, i.e., the figure of the statue . . . (He means: just as the statue which is an artificial thing has in it matter and form) . . . so man also, both common and specific . . . (He means: that which is a form existing in the soul is a universal. For it has matter, which is its genus, and form, which is its differentia) . . . consists of something analogous to matter, which is the genus, and of form, which is the differentia. (He means: the genus is analogous to matter because genus is not matter in truth, I mean, its nature. Similarly, differentia resembles the form and is not a form in its natural existence.) This whole, I mean, animal, rational, and mortal, is man, just as that thing is statue. (He means: this whole is composed of the two, just as that (statue) is composed of the two.)

Commentator: This is a definition the differentia has because of its relation to the species which it is under, and inasmuch as it is an essence, not a universal. The reason why Porphyry brought the example from artificial objects is because the form and matter in them are manifest, since their matter is the first to exist, and we observe how the form comes to it. This is not so with natural objects, because the agent of these (i.e., artificial objects) is from without. His phrase, "the common and specific man," means the form arising in the soul.

234. *Porphyry*: They also describe the types of these differentiae thus: . . . (He means: the substantial) . . . the differentia is that whose nature it is to separate things under the same genus . . . (He means: it se-

parates the species encompassed by the same genus, such as the species of animal) . . . because rational and irrational separate man from horse, both of which are under the same genus, i.e., animal. (No explanatory note.)

Commentator: This is a third description of the differentia in terms of the relation of some members of the species to others. Here the use of the differentia is not from the point of view of the differentia's being (just) an essence but of its being an essence which separates one thing from another.

235. *Porphyry*: Again, they describe it in this way: (He means: the substantial differentia.) The differentia is that by which such things differ which do not differ in genus. For man and horse do not differ as to genus, because both we and irrational beasts are animals. (He means: the differentia is that by which species differ which do not differ as to their genus, for instance, man and horse. For both do not differ in their genus which is animal, since we, i.e., humans, and irrational beasts like donkeys and others are included in animal.) But when rational is added to animal, it separates us from them. Both we and the angels are rational, but when mortal is added to us, it separates us from them. (He means: but if rational is added to the genus which is animal, we are separated by it from the irrational beasts. However, we share rationality with the angels, but we are separated from them by the differentia of mortal).

Commentator: This description the differentia has because it is (merely) a differentia, not because it is an essence. It is the description which is not different from the one preceding it, except that the second (i.e., the present) one is clearer than the first. He means by the angels the heavenly bodies.

236. *Porphyry*: When they give more detailed explanation of the differentia . . . (He means: when they give more detailed explanation of the substantial differentia) . . . they say that the differentia is not a kind of quality that happens by chance, separat-

ing the things under the same genus, but it is something useful in the essence. (He means: it is that which is constitutive of the essences of species and is included in their definitions); and which is in the nature of that thing; and it is that which is part of its meaning. (He means: it is that which is part of the nature of the thing.) For we do not say with regard to man that to (be able to) sail is his differentia, although it is the proprium of man . . . (He means: this is not one of the substantial differentiae which constitute his nature) . . . because if it were a differentia for man, we would say that of animal some (are able to) sail, but others are not; thus we separate him (man) from the other animals. (He means: we divide it, i.e., animal, by substantial differentiae, through this differentia. We do not, by this differentia (i.e., ability to sail), divide it by a substantial division, but we divide it by propria.) But we do say that (the ability) to sail is not completive of essence, nor is it part of it . . . (He means: it is not constitutive of a thing's nature) . . . but it is only a possibility for that substance . . . (He means: it is an inseparable proprium of the substance.) . . . because it is not one of the differentiae described as species-producing. (He means: it is not one of the differentiae whose addition to the genus produces a species.) Species-producing differentiae, then, are those which produce another species; (He means: they are those whose addition to the genus produces another species, and are included in the essence.) . . . and which are assumed in the nature of that thing. (He means: they enter the definition of the thing.) Concerning differentia we regard the description thus far as sufficient. (He means: concerning the substantial differentia we regard these descriptions as sufficient.)

237. *Commentator*: This is the true description of the substantial differentia, for the first descriptions are shared by the accidents. The difference between the substantial and the peculiar differentiae such as the ability to sail is that the

peculiar differentiae are not completive of the essence, but are attendant upon it and are a permanent state which exists in the constitutive form like the arts which exist in the rational soul and (also like) the ability to laugh. You must know that substantial things are those which constitute the nature of something, and these are its matter and its form. These two things, I mean, matter and form, have things which characterize them. We call that which characterizes matter accidents, since matter is related to one thing or another; and we call that which characterizes form proprium, because the form particularizes something, like man's ability to laugh and to acquire the arts and such things as these. His statement that animal is not divided by the ability to sail means that we do not divide animal by a division from which no species would be produced. This division is, rather, the method by which something is divided by accidental differentiae. And here let us break off our detailed statement on this lesson.

Sixteenth Lesson
Proprium and Accident

238. *Porphyry*: They divide proprium in four ways.

Commentator: After completing the consideration of the substantial predicables, Porphyry turns to discuss the accidental predicables. Since the accidental predicables are divided into two. proprium and accident. and since proprium resembles the substantial predicables by reason of its inherence in one thing (species)and it is correct that we indicate it when we describe that thing, the discussion of proprium precedes that of accident. Since proprium is an equivocal term, Porphyry, as usual, proceeds to use the appropriate rule regarding the division of an equivocal term. He devotes himself to the determination of the meaning (of proprium) which is suitable to the logician, and investigates it. He divides proprium into four types.

239. Firstly, that thing which exists for the whole of a species, though not for that (species) alone, such as man's natural

and potential possession of two feet. The addition in the description is due to the fact that not every man has two feet in actuality, although this belongs naturally to him. For having two feet does not belong to man alone, but (also) to other species of animal, like bird.

240. Secondly, that thing which exists in one species and in that alone, but not for every individual (of that species), for instance knowledge of medicine and geometry. For this knowledge exists for man alone, but not every individual man has it. It is not every man who has the faculty for geometry and medicine. You must understand that here faculties, not dispositions (are meant), since disposition belongs to each one. This meaning is more characterizing than the first because the meaning of proprium is that it is that which belongs to something alone.

241. Thirdly, that thing which exists for one species and for it alone and for all individuals of it but not always, such as grey hair for man. For it belongs to man alone and all individual men, but in old age, of course. Porphyry said that grey hair belongs to man alone because it is not in (other) species of animal. That which has grey hair in old age is called man.

242. Fourthly, that thing which exists for the species, for it alone, and for all members of it and always, such as risible. I mean by my word, "risible," potentiality, not actuality. For the potentiality to laugh is a faculty of the soul whose nature it is to open the lips in a natural way which indicates a feeling of pleasure and happiness.

243. The truest of these meanings to be called proprium is the fourth meaning, seeing that all the conditions of proprium exist in it. It is that meaning, not the others, which is the concern of the logician. Porphyry describes this (fourth) proprium as follows: the true proprium is that which does not cause a variation of degree in the subject, and which is extraneous, not essential, to it. Our statement that the proprium is convertible is meant to differentiate it from accidents, while the statement that it is extraneous is meant to differentiate it from the differentiae which are substantial.

244. Conversion is of five kinds. (a) The conversion of the propria with what are characterized by them, like risible

which converts with man. (b) The conversion of the definition with its definiendum, such as the definition of mannamely, that he is a rational and mortal animalconverts with him. (c) The conversion of premises with themselves, such as the conversion of the proposition which says: "no single human is a bird," converts with the proposition which says: "no bird is a human being." (d) The conversion of relations, such as the conversion of father with son, for just as the father is a father of a son, so is the son a son of a father. (e) The conversion of proximate cause with the effect, for if the causes which are constitutive of the essence of Zaid exist and come together, then Zaid would exist. And if Zaid exists, then his proximate cause exists. [120] Here (i.e., in this paragraph) we are only using conversion in the sense of the conversion of proprium with what is characterized by it.

245. The proprium is discoverable in respect of one of these three ways: either in respect of the proximate matter of the thing, or in respect of the form peculiar to it, or in respect of the action which issues from this form. As for matter, it is as when we say: man is characterized by being straight in stature and having broad finger nails. For he has this proprium because of his body. As for the form, it is as when we say: man is characterized by having a potentiality to laugh. As to the action it is as when we say: it is characteristic of fire to move upwards.

246. An objection may be raised against Porphyry which is this: how do you maintain, Porphyry, that the true proprium exists for something (a species) always and gave as an example of it the potentiality to laugh? Do you see that when man comes to laugh in actuality, you judge that he is laughing in potentiality? For, if this were so, it would follow necessarily that laughter exists both in potentiality and in actuality, and this is impossible. The potentiality to laugh does not always exist. The solution of the objection is as follows: potentiality is of two kinds: (a) the disposition which exists in matter to receive the form; and (b) the potentiality which occurs after the disposition from which the action issues. That which disappears with the coming-into-being of something in actuality is a potentiality of the first kind. The second, however, does not dis-

appear when man makes something, since the action issues from potentiality. An action exists only when an agent exists. The potentiality to laugh is of the second kind. 121 If potentiality to laugh is to exist for man, it is necessary that something of his laughter must exist in actuality. This fact follows the case of all artisans. For when the artisan has not erected the construction and has (thus) not caused it to occur in actuality, the potentiality to construct which exists in him disappears (temporarily), but it remains with him, since actuality issues from potentiality. And you must know that the propria existing in a thing are potentialities which follow the form, while the form is not exactly the same. With this Porphyry breaks off his discussion of proprium and takes up accident.

247. He changes the custom which he used in discussing genus, species, differentia, and proprium. In considering each of these he began with its division. Then he determined the meaning which he wished to discuss, and then defined that meaning. When he discusses the accident, however, he begins by defining it, before dividing it (into its meanings). The reason for this is that he describes accident as comprehensive of all its types (of meaning) in the same manner. (The description of the genus is not comprehensive of all its types in the same manner.) And each one of these types has a characteristic description different from the description of the other; and because its description is one, he defined it before dividing it.

248. He describes the accident in three ways. The first is this: the accident is that which exists in something and which disappears without the destruction of that thing. You must know that accidental forms existing in something are of this description because they are neither included in the essence of the substance nor are they constitutive of its essence. For when they are excluded they do not affect the essence of the thing. This (type of) accident is divided into two, separable, like sitting and standing, and inseparable, like blackness of the crow. This, however, though inseparable in reality, yet is separable in thought while the essence of the thing remains.

249. An objection may arise as to this description. It is this: how do you maintain, Porphyry, that the accident is that which exists and is corruptible without the corruption of its subjects?

We have an evidence of something which contradicts your statement. For when hectic fever, which is an accident, attaches itself to the organs (of the body), it does not separate from them except after their destruction. [122] The solution of the objection is this: that thing to which fever attaches itself is composed of matter and form. Its matter is the body, and its form the soul. The subject of fever is only the body, and not the soul, since the form does not attack a form. And with the separation of the fever the form does not disappear, but not so with the body in which the fever exists. Unless the fever disappears the subject would not. This is sufficient for the solution of this objection.

250. The second description of accident is this: accident is that which may exist in one and the same thing, although it may not, such as whiteness, for it may or may not exist in a body, and so are all accidents, separable and inseparable.

251. The third description of accident is this: accident is that which is neither genus, nor differentia, nor species, nor proprium, and which is always in a subject. This description of the accident is negative. You must know that it is impossible for an instance (of an accident) of this description to be accomplished in any casual thing, but in things which are limited in number. The discussion of the other predicables precedes this last one; and it is correct that the last one should be described by the negation of the others. It is said that it is that which is not one of those previously discussed because none of them remains. This is what Plato did in his description of justice. For he described it as the privation of honesty by itself and courage and knowledge by themselves.[123]

252. Having set forth the three descriptions of the accident, it remains for us to know the difference among them. We say that the difference between the first two and the third descriptions is that the first two are positive, while the third is a negative description. The difference between the first and the second is that the first indicates the present time in which the accident is and has been existing, while the second indicates the future time in which the nature of the accident will be. The first one says that the accident is that which is and would disappear without the corruption of its bearer, and here it in-

dicates the present time, and the accident is taken as existing in it (i.e., the present time).

253. The second says that accident is that whose existence is possible, though it may not be. Possibility is conditional upon a future time, and the nature of the accident depends on the existence of such a time. For what has occurred yesterday and today are necessary.

254. As to his addition with regard to the third description that it is that which is always in a subject, it is because goat-stag is neither a genus, nor differentia, nor species, nor proprium and, hence, it is not an accident. The reason why the descriptions of accident are three is because you either describe it positively or negatively. You describe it negatively by negating it of the remaining four. (You describe it) positively when you take it as already existing or that its nature is to exist. Its descriptions are, thus, three, neither more nor less. And here let us break off the discussion of the generalities of this lesson.

255. *Porphyry*: They divide proprium in four ways. (a) That which happens to some one species alone, though not to every individual (of that species), such as (knowledge of) medicine and geometry for man. (b) That which happens to a whole species, though not to that alone, like man's possession of two feet. (c) That which happens to a species alone and to all individuals of it, and at some times, like the greyness of the hair for all men in old age. (d) The fourth proprium is that which happens to one species alone, and to all of its individuals, and at all time, such as laughter for man, although he does not always laugh, but he is said to be a laughing (thing) from the fact that it is his nature to laugh, not because he is always laughing. This proprium is always innate in him, just like neighing in a horse.

Commentator: Porphyry is enumerating the meanings designated by the name, "proprium." He means here by laughter the faculty to laugh; laughter is a potentiality for him, not an actuality. We have already treated this in detail in the general study of the lesson.

256. *Porphyry*: They call these (he means: the fourth proprium) the true propria, because they are convertible. (He means: they are convertible with such things as they are propria of, and do not exist without them, i.e., their subjects), although they are not included in their definitions). For if horse exists, then neighing exists; and if neighing exists, then horse exists. (Understand that each of these converts with the other, and is equal to it.)

Commentator: After his enumeration of the propria, he tells us which of them is the true proprium, and maintains that it is the fourth (kind). He describes it as that which is convertible with what is characterized by it (proprium) and does not exceed it. When the subject exists, it (proprium) exists; when the subject disappears it disappears. When the proprium exists, the subject also exists; and when it disappears, the subject disappears; (he means, in existence, not in thought).*

Discussion of Accident

257. *Porphyry*: And accident is that which is present and absent without the destruction of the subject. (He means: it is that which exists in something and disappears without the destruction of its subject.)

Commentator: This is the first description of accident. The "*waw*" ("and") means that the discussion of the accident is arranged on the pattern of the discussion of the proprium.

258. *Porphyry*: It is divided into two, separable and inseparable. To sleep is a separable accident, and to be black is an inseparable accident for the crow and the black person. A crow, however, can be imagined to be white, and the black person to cast his color, without the destruction of the subject. 124

Commentator: These are two types of accident.

259. *Porphyry*: They also define it thus: accident is that

*This sentence which is also bracketed in the manuscript must have been inserted by a pupil of Ibn al-Tayyib (ed.)

which may be present and not present to the same thing.

Commentator: This is the second description of accident. The case of the whiteness of snowwhether its whiteness is an accident or nothas been a puzzle for many a commentator. The solution of their puzzle is this: the whiteness is not that of which the essence of snow is constituted, but it is an accident although something inherent. For when cold condenses the clouds, it collects them, and from their compression air results. In this way, a transparency results and because of the transparency of the clouds it is seen as white.

260. *Porphyry*: Or, that which is neither genus nor differentia, nor species, nor proprium, and that which always subsists in a subject. (He means: that which if you considered you would find it to be neither genus, nor differentia, nor species, nor proprium, and that which exists in a thing.)

Commentator: This is the third description. We have already, in the general study of the lesson, explained when it is correct that you describe things positively, and when it is not. With this let us break off the detailed discussion of this lesson.

Seventeenth Lesson

261. *Porphyry*: Having defined and distinguished among all the predicables which were proposed . . .

Commentator: First of all, Chrysaorius was a minister known for his city politics and state administration.

262. Having finished the definition of these five predicables, Porphyry needed to state the communities and differences among them, since that (i.e., existence of the differences and communities) was evident from their definitions. But he wished to make the inquiry easy for Chrysaorius. He made the effort to isolate it in order to make its comprehension easy for Chrysaorius. Porphyry examines the communities and the differences among the five predicables in two ways. The first one is the collective way. This he accomplishes by applying himself to all the five, bringing their communities and differ-

ences together. The second is the individual way. This he accomplishes by applying himself to two of them at a time. He states the communities and the differences between the two. He starts with the collective way. His discussion is as follows:

263. He says: these five predicables are common in that they are predicated of many. For genus, differentia, species, proprium, and accident are all predicated of many things. This is the community stated by Porphyry. We, however, state for them a second community. It is that when one of them exists, the existence of the other follows necessarily. For when genus exists qua universal, the existence of species follows necessarily, since both of them are related. Similarly, when differentia exists, the existence of species necessarily follows. When species also exists, the existence of individual follows necessarily, since species is predicated only of individuals. Similarly, when the individual also exists, the existence of species and genus follows necessarily inasmuch as the (latter) two are essences. So, if you examine all of them you would find the existence of some necessarily following the existence of others either qua essences or qua universal and peculiar.

264. The difference between them is that genus, like animal, is predicated of many species in respect of what a thing is. For animal is predicated of both man and ass in respect of what they are. Differentia, too, is predicated of many species, but in respect of what sort a thing is of, like rational. For rational is predicated of god and man in reference to what sort a thing is of. But, although differentia is common to genus in being predicated of many species, yet it is predicated of fewer things than genus. For animal is predicated of rational and irrational, while the differentia, rational, is predicated of rational beings alone, I mean, of man and god alone. As for species, it is predicated of many things that are individually different in reference to what a thing is. Proprium is predicated of its species and the individuals under that species in reference to what sort a thing is of. The difference between it and differentia is that accident primarily subsists in individuals and secondarily in species, because we transfer it to species by means of its existence in the individual. For writing exists primarily in Zaid,

and secondarily in man, i.e., the mind transfers it (writing) and makes it exist in man. Differentia exists primarily in species, and secondarily in individuals, for rational exists primarily in man, and secondarily in Zaid, I mean, by means of man, because Zaid is a man. This is the collective way.

265. After this, Porphyry takes up the individual way in which he brings out the communities and differences among these (five predicables). It is that (way), according to what we said, (by which) he examines them in twos (at a time). He starts off with the examination of genus and one of the (remaining) four. He says that genus and differentia are common in three ways. The first is that genus and differentia are predicated of many species, for animal is predicated of man and ass, and rational of man and god. The second community is that all things that are predicated of them in reference to what they are as essences are predicated of what are under them. For body is predicated of animal and, so, it (body) is predicated of man also; a distinguishing (quality) is predicated of rational, and that is predicated of man also. The third community is that genus and differentia are by nature prior to species inasmuch as both are essences. For animal and rational are naturally prior to man, because when both exist the existence of man follows necessarily, and when man exists, the existence of the two (animal and rational) necessarily follows. These are the communities stated by Porphyry.

266. We, on our part, would state two other communities in addition to these. The first is that genus and differentia are common in that the definition of species is composed of them, inasmuch as they are essences. The second is that the subsistence of the species is accomplished by them insofar as they are essences.

267. An objection may arise, which is this: what is Porphyry's reason for stating the communities between genus and differentia first, whereas in teaching about the five predicables, he made species follow genus and precede differentia? We say: when Porphyry was defining the predicables he examined them according to a teaching method, and arranged them according to the requirements of the logical inquiry. Thus, here, since his presentation of the communities and the differences

was in excess of what he needed, he arranged them in a natural way, and did not pay attention to the teaching method. Moreover, he informs us that differentia is investigated, in one way as prior to species, and in another as posterior to it. This is sufficient for the solution of this objection.

268. An objection may be raised against Porphyry; it is as follows: how do you maintain, Porphyry, that differentia is said of many species, and we, here, see the plant, a differentia, which does not go beyond a species; levity, a differentia of fire, does not go beyond a species; and receptivity of knowledge, a differentia of man, does not go beyond the species of man? 125 The solution of the objection is as follows: the differentia, in accordance with its name, is that by which things are differentiated and made specific, and it is impossible that that by which things are differentiated and made specific should include many species, but it exists only for one species. But differentia is either simple or composite. The simple is such as levity and, in general, the simple forms of species, and the composite is such as the composite form of species like man and ass. For the differentia of man is composed of rational and mortal. Simple differentiae are those equal to their species, for plant is equal to the earth, and levity to fire. Similarly, the composite, as a whole, is equal to its species. But, since the composite differentiae are used collectively and individually, if they are used collectively their species become equal, like rational and mortal, for man. If a part of the differentiae is taken, it includes many species. When Porphyry says that "differentia is predicated of many species," he means a part of the composite, not the saimple, differentia. On account of the combination of both (simple and composite) in it (species) the species of differentiae is one.

269. After stating the communities between genus and differentia, Porphyry takes up the differences between them. He states no fewer than six differences. (i) The differentia although it is common to genus in being predicated of many things, yet it is predicated of fewer things than genus. For animal is predicated of both rational and irrational, while the differentia rational, is predicated only of rational beings. Here, he means the divisive, not the constitutive, differentia, since the con-

stitutive is more general. For "having a soul" is more general than animal because plants, too, have souls. (ii) Genus comprehends differentia in potentiality. Differentia, however, does not comprehend genus. For animal is rational in potentiality, but rational is not animal in potentiality. (iii) Genus is prior to differentia by nature. For the existence of animal is not necessarily followed by the existence of rational, whereas the existence of rational is necessarily followed by the existence of animal. (iv) Genus is predicated in respect of what a thing is, but differentia in respect of what sort a thing is of. (v) Genus is one in each of the species; the differentiae, however, are many. For the genus of man is animal, while its differentiae are rational, mortal, receptive of knowledge, and refinement. (vi) Genus resembles matter, and differentia form. These are the differences stated by Porphyry.

270. We, however, would state another difference in addition to them. We say that the differentia is that by which the species is called according to names which are derived. The genus, however, is called according to names which are univocal. For, from rationality, we call man rational; we call him animal by the name of his genus, not according to a derived name, but according to a univocal name. [126]

271. The communities between genus and species are three. The first is that both are predicated of many. The second is that both are by nature prior to what they are predicated of inasmuch as they are essences. For animal is by nature prior to man, and man is by nature prior to each of its individuals. The third community is that, inasmuch as both are general terms, they are analogous to the whole. The genus is in the species; but the species is in the individuals.

272. The differences between them are five. Firstly, genus is prior by nature to species inasmuch as it is an essence.[127] For genus is the subject of the species. Secondly, genus comprehends species inasmuch as it is (more) general, and species is comprehended by genus. Thirdly, genus is predicated of species, inasmuch as it is an essence; species is not predicated of genus because it (species) is peculiar. Fourthly, genera exceed species inasmuch as they are general, and species exceeds genus inasmuch as it is an essence, and species is composed of

a genus and a differentia. Fifthly, it is not proper for species to become a summum genus, nor is it proper for genus to become an infima species. Porphyry said the summum genus and the infima species and not (any kind of) a species or a genusbecause it is proper for the subalterns to be both a species and a genus.

273. The communities between genus and proprium are three. Firstly, both follow species; but the following of genus is on the basis of its being constitutive, and that of proprium is on the basis of its being extrinsic. Secondly, both are predicated of what they are predicated of equally without variation of degree. For genus belongs to its species equally, and proprium to its species and the individuals of the species equally. Thirdly, both of them are predicated univocally, I mean, in name and in definition. For man is called by the name of animal and by its (animal's) definition; and he is called by the name of risible and by its definition.

274. The differences between them are five. Firstly, genus is prior in rank, because it exists before species; proprium is posterior in rank because it follows the existence of species. Secondly, genus is predicated of many species, while proprium is predicated of one species. Thirdly, proprium is equal to its species, but genus always exceeds the species. Fourthly, proprium exists for the thing (species), for it alone, for the whole of it, and always. Genus, however, exists for the whole of the thing and always, but not for it alone. Fifthly, when genus disappears, proprium also disappears; but when proprium disappears, genus does not disappear. For when animal disappears all its species in which the propria exist would disappear. When risible disappears, however, animal would not disappear.

275. As to the community between genus and accident it is one. The reason why the communities between them are few is the disparity between their natures, because genus is fundamental and essential, while the accident is one of the extrinsic things. The community between them is that both are predicated of many. But the differences are four. The first is that genus is prior by nature to accident. For genus, insofar as it is an essence, is naturally prior to the species to which

and to whose individuals accidents occur. The second is that species participate equally in genus. But the things that participate in accidents do not do so equally. The third is that accident exists primarily [128] in the individual since accident follows the complexion of the individual. But genus is by nature prior to the individual in which the accidents primarily exist. The fourth difference is that genus is predicated in reference to what a thing is, but accident in reference to what sort a thing is of. Here ends the discussion of the communities between genus and the remaining four; and the general study of the lesson is concluded.

276. *Porphyry*: Having defined and distinguished all the predicables which we proposed, I mean, genus, differentia, species, proprium, and accident, we must state what things are common and what are peculiar to them. Now, it is common to all of them to be predicated of many, except that genus is predicated of the species and individuals, and the differentia is also predicated in like manner. Species is predicated of individuals under it, and proprium of the species of which it is the proprium, and of the individuals under that species. Accident is predicated both of species and individuals. For animal is predicated of horse and dog, since these are species, and also of a particular horse and particular dog since both are individuals. And irrational is predicated of horse and dog and their particulars. Species, like man, is predicated of particular men alone; and proprium, like risible, of man and particular men. Blackness is predicated of species of crows and their particulars, being an inseparable accident. Movement is predicated of man and horse, being a separable accident. But it is predicated primarily of individuals, and secondarily of the things which comprehend individuals.

277. *Commentator*: After completing the discussion of these five predicables, Porphyry sets out to inform us of the communities and differences between them. He does that both in a collective and an individual way, with the collective way

preceding. He states examples of these differences and communities. As to his statement that "accidents exist primarily in individuals, and secondarily in species," it is because accident subsists in the individual, not in the species. You must know that although differentia and accident are both predicated of many species in reference to what sort a thing is of, yet there is a difference between them, namely, that differentia is intrinsic, while accident is extrinsic. His statement that genus is predicated of species and individuals refers to those individuals under the species, not any individual which exists; and so with the differentia. His statement that accident is predicated of species and individuals means those which it is the nature of accident to occur to. Animal is a genus predicated of its species and the individuals under the species. Similarly, irrational is a differentia predicated of the species of which it is the differentia and their particulars.

278. *Porphyry*: The thing common to genus and differentia is that both comprehend species, for differentia also comprehends species, though it does not comprehend all that the genera comprehend. For rational, although it does not comprehend irrational, as animal does, yet comprehends man and god which are both species.

Commentator: He now takes up the presentation, in an individual way, of the communities and differences between genus and differentia. He does this by applying himself to two of them at a time, and treats in detail the communities and differences between these two. In this section he states a first community between genus and differentia. They have this community inasmuch as they are universals, not inasmuch as they are essences.

279. *Porphyry*: Everything also which is predicated of genus in reference to that thing's essence is predicated of the species under it; and whatever is predicated of differentia in reference to that thing's essence is predicated of species formed from it. For animal which is a genus in respect of essence, substance and animate are predicated of it, and these two also are predicated of all the species under

animal until we reach the individuals. Since rational is a differentia, the use of reason is predicated of it in respect of essence. The use of reason is not predicated only of rational, but it is predicated also of the species under rational.

Commentator: This is the second community between genus and differentia qua essences.

280. *Porphyry*: Genus and differentia are common in that when they disappear, the things under them also disappear. (He means: the species, since he took the substantial things of which the nature of species is constituted.) For, just as when animal is not, neither horse nor man would be, so also when rational is not, there would be no animal which uses reason.

Commentator: This is their third community, and they have it inasmuch as they are essences.

281. *Porphyry*: It is the characteristic of genus to be predicated of more things than differentia, species, proprium, and accident, for animal is predicated of man, horse, bird, and snake (no explanatory note), while quadruped, which is a differentia, is predicated only of that which has four feet. Man is predicated of individual men alone, and neighing of horse and of its particulars. Accident, likewise, is predicated of fewer things than genus. You must take, among the differentiae, those differentiae by which the genus is divided, not those which complete the essence of genus. (He means: not those which constitute the essence of the subaltern genus, and in general, you must understand this with regard to the subalterns, not to the summum genus, which does not at all have many divisive differentiae. The subaltern, however, has both the constitutive and divisive differentia.)

Commentator: This is the first difference between them, and they have that (difference) insofar as they are universals. As to the reason for his additional statement that you must choose from among the divisive differentiae, not the constitutive, it is because the constitutive differentiae only constitute

a species, and not a genus. The differentiae which are related to the genus are the divisive, for the summum genus possesses separative, not constitutive, differentiae.

282. *Porphyry*: Moreover, genus comprehends differentia in potentiality, because of animals one kind is rational, the other irrational, but differentiae do not comprehend genera. (He means: in potentiality, because we do not say that the rational in potentiality is animal.)

Commentator: This is the second difference which they have inasmuch as they are essences.

283. *Porphyry*: Besides, genera are prior to the differentiae under them, and, hence the former eliminate the latter but are not eliminated by their (the latter's) elimination. For when animal is eliminated, rational and irrational are eliminated also, but differentiae do not eliminate genus. For if all the differentiae are eliminated, animate and sensible substance would remain in thought; that substance is animal.

Commentator: This is the third difference which they have qua essences. Genus is by nature prior to the differentia under it. His statement "if all the differentiae are eliminated," means the divisive differentiae, such as rational and irrational. Were their elimination by genus conceivable, an animate and sensible substance would remain as a concept in the mind; it is the genus which is called animal.

284. *Porphyry*: Moreover, genus is predicated in respect of what a thing is, and differentia, as we said, is predicated in respect of what sort a thing is of.

Commentator: This is a fourth difference which they have qua essences.

285. *Porphyry*: Besides, the genus in every species is one, such as animal with regard to man. The differentiae, however, are more than one, just as you say, rational, mortal, receptive of knowledge and intellection, for these are the differentiae by which man differs from other animals.

Commentator: This is a fifth difference which they have qua essences. By the (above) enumerated differentiae man differs from other species of animal.

286. *Porphyry*: Genus, moreover, is similar to matter, and differentia to form. [129] There are other things in addition to what we have stated which are common and peculiar to genus and differentia, yet we would be satisfied with these.

Commentator: This is a sixth difference which they have qua essences. As for the way in which genus is similar to matter, it is because both are substrata of contraries; for just as body admits of blackness and whiteness, so genus admits of rational and irrational. And just as copper does not exist without a color, so animal does not exist except with a differentia. The difference between genus and matter is that genus exists in the imagination, while matter has a real existence. As to his statement "that genus and differentia have other things" it is because Aristotle deals with them exhaustively in the *Topics*.[130]

287. *Porphyry*: Genus and species possess in common, as we said, the fact of being predicated of many different things, but species must be regarded as species, and not as genus, when we find the same thing as species and genus.

Commentator: This is the first community between genus and species which they have as universals. The reason for the additional statement that we must take species as species, and not as genus, is because if we take the subalterns as genus we would appear to be correlating a genus and a genus, and this would be like the one who correlates a thing and itself, and this must be false.

288. *Porphyry*: Moreover, it is common to both of them to be prior to the things they are predicated of.

Commentator: This is the second community which they have insofar as they are essences. Understand that their priority is by nature.

289. *Porphyry*: Each of them is also a certain whole. (He means: because genus comprehends species, and species individuals.)

Commentator: This is the third community which they have insofar as they are universals.

290. *Porphyry*: They differ in that while genus comprehends species, species are comprehended by, and

do not comprehend, genera. Wherefore it is said that genus exceeds species.

Commentator: This is the first difference between them which they have inasmuch as they are universals. Genus exceeds species because the former comprehends many species.

291. *Porphyry*: Moreover, it is necessary that genera should be taken as prior and be presupposed, and when they are formed by differentiae, that they should produce species, hence genera are prior by nature. They eliminate, but are not eliminated by the elimination of other things. For when species exists, genus also exists; but when genus exists, species, no doubt, does not exist.

Commentator: This is the second difference which they have insofar as they are essences. Genus is by nature prior to species because it is an essence. Thus, when species are eliminated, it is not eliminated, but remains in the mind. When species, qua essence, exists, genus necessarily exists, because genus is its substratum, and there is no conversion in this matter.

292. *Porphyry*: Besides, genera are univocally predicated of species, but species are not predicated of genera.

Commentator: This is a third difference which they have as essences. It is that genus is predicated, by its name alone, of species, but it is not so with species.

293. *Porphyry*: Also, genera exceed the species under them because they comprehend them; (He means: inasmuch as they, i.e., genera, are universals) and species exceed genera by the differentiae which particularize them (species).

Commentator: This is the fourth difference; with regard to genus it is so inasmuch as it is a universal, and with regard to species it is so inasmuch as it is an essence. His statement, "also, genera exceed the species under them," means inasmuch as they (genera) are universals. And his statement, "species exceed genera by the differentiae which particularize them," means inasmuch as they (species) are essences, and genus (also) an essence.

294. *Porphyry*: Besides, neither can species become a summum genus nor genus an infima species.

Commentator: This is the fifth difference between them and, if you like, take them inasmuch as both of them are essences and universals. He defined species as either an infima species or a subaltern. For an infima species is the first form abstracted by the mind from the lowest things, and it is improper that it should be common to genera, or that it should become a summum genus. Similarly, a summum genus does not proximately comprehend the individuals, nor is it a first, but the lowest form. So, it is improper that it should be an infima species.

295. *Porphyry*: It is common to both genus and proprium to follow species, for if man exists, animal exists, and if man exists, risible exists.

Commentator: This is the first community between genus and proprium. As for genus it is so inasmuch as it is an essence; and as for proprium it is so inasmuch as it is an essence as well as a universal. You must not think that genus and proprium follow species in the same way; but genus, by virtue of its being substantial, is prior, while proprium, by virtue of its being extrinsic, is posterior to the genus.

296. *Porphyry*: The fact that genus is equally predicated of species, and likewise proprium is equally predicated of the individuals which participate in it, is common. For man and ox are equally animal, and Anytus and Melitus equally risible.

Commentator: This is the second community which they have insofar as they are essences.

297. *Porphyry*: It is also common that genus is univocally predicated of its species, and, likewise, proprium of the things of which it is the proprium.

Commentator: This is a third community which they have as essences. For animal is univocally predicated of its species, and so is risibility.

298. *Porphyry*: They differ in that genus is prior; (he means: because the essence of a thing is constructed out of it) and proprium posterior to it. (He means: because it is extraneous to species.) For animal must first exist, and then be divided by differentiae and propria. (He means: there exists genus which is prior.)

Commentator: This is the first difference they have inasmuch as they are essences.

299. *Porphyry*: They also differ in that genus is predicated of many species, while proprium is predicated of one species, I mean, the species of which it is the proprium.

Commentator: This is the second difference they have inasmuch as they are essences.

300. *Porphyry*: They also differ in that in predication proprium reciprocates what it is the proprium of. Genus, however, does not reciprocate what it is the genus of, because if a thing is not an animal, it is not a man, and if it is not an animal, it is not risible: but if anything is a man, it is risible, and conversely, if it is risible, it is a man.

Commentator: This is the third difference they have inasmuch as they are essences. The reciprocation of the proprium means with its species, for it converts with its species, and the species converts with the proprium. They do not contend for superiority.

301. *Porphyry*: They also differ in that proprium exists for the whole of the species of which it is the proprium, for it alone, and always; but genus exists for the whole of the species of which it is the genus. and always, except that it does not exist for it alone.

Commentator: This is the fourth difference which they have inasmuch as they are essences.

302. *Porphyry*: Moreover, when propria are eliminated, their elimination does not affect the genera. When genera, however, are eliminated, the species to which the propria belong are eliminated, and the elimination of these species entails the elimination of their propria.

Commentator: This is the fifth difference which they have insofar as they are essences.

303. *Porphyry*: It is common to genus and accident to be predicated, as we stated, of many things, whether the accident be separable or inseparable. For movement is predicated of many things, and blackness of

crows and black people, and of some inanimate things.

Commentator: This is the one community between genus and accident, and they have that because they are universals. Movement is one of the separable accidents and it is predicated of all things that move, and of inanimate things, such as pitch and ebony.

304. *Porphyry*: Genus differs from accident in that it is prior, and accidents posterior, to species. For if you take an inseparable accident, that of which it is accident undoubtedly is prior to the accident.

Commentator: This is the first difference between the two inasmuch as they are essences. Genus is prior to the species to which the accidents occur. He means (it is prior) by nature.

305. *Porphyry*: The things which participate in genus do so equally. (He means: the genus of the species is naturally one.) But the things which participate in accident do not do so equally . . . (He means: there is variation of degree, for whiteness exists in a white thing by variation of degree) . . . because participation in accidents admits of variation of degree. (He means: whiteness, for instance, does become more and less.) Participation in genera, however, does not. (He means: because genus is in its species in a way that is equal.)

Commentator: This is a second difference they have inasmuch as they are essences.

306. *Porphyry*: Accidents primarily exist in individuals. (He means: because the basis of accidents is individuals.) As for genera and species they are by nature prior to individuals. (Understand that inasmuch as they are essences.)

Commentator: This is a third difference which they have inasmuch as they are essences.

307. *Porphyry*: Genera are predicated of what are under them in reference to what a thing is, and accidents in reference to what sort a thing is of, or how each thing subsists. Because when you are asked what sort of man a black man is, you say: he is black; and

when you are asked how Socrates is, you say he is sitting or walking.

Commentator: This is the fourth difference they have inasmuch as they are essences. And with it, let us break off our detailed discussion of this lesson.

Eighteenth Lesson

308. *Porphyry*: We have described how genus differs from the remaining four predicables.

Commentator: After his examination of the communities and differences of genus in relation to the other four predicables, Porphyry examines the communities and the differences of the differentia in relation to the rest. However, since the differentia has something which is prior to it, namely genus, and something which is posterior to it, namely, the remaining three which come after it, and since its communities and differences with what are posterior to it have already been stated when he examined the relation of them to it, he omitted them (i.e., differences and communities). He examines the communities and differences of the genus in relation to the things which come after it, and its communities with the differentia are obtained. There are three communities after it (differentia): the community the differentia has with species; the latter with proprium; and the proprium with accident. If these communities are added to those of the genus they become seven; and if they are added to those of species, and such as are after it, both communities become nine; and if the community of proprium and accidentwhich community is oneis added, there would be ten communities and ten differences. If the previous addition is not omitted but is repeated, the communities as well as the differences would be twenty because each of them would have four communities and differences.

309. Now what is common to differentia and species is of two kinds. Firstly, both of them are predicated of their subjects equally, for man and god, in terms of the concept of rational, are equal; likewise, Socrates and Plato are equal in terms of

the concept of man. Secondly, both of them are always present to what they are present to. As to the differences between them they are four. The first is that differentia is predicated in respect of what sort a thing is of, and species in respect of what a thing is. The second is that species is found only in its individuals alone, but differentia is predicated of many species. The third thing is that differentia, inasmuch as it is an essence, is, by nature, prior to the species, for the existence of rational is not necessarily followed by the existence of man. And the fourth is that differentia is joined with another differentia for the subsistence of a species, such as (the joining of) rational and mortal. Species, however, is not joined with another species; no single nature (i.e., species) would be produced from the (joined) two; for there is no one nature (species) which comes from the nature of horse joined to the nature of ass. However, when their individuals are united another nature, different from that of the two, is produced.

310. Differentia and proprium have two things in common. The first is that both are predicated of their subjects equally. The second is that both are always present to what they are present to. There are two differences between them. The first is that differentia is predicated of many species, but proprium of its species and the individuals of that species alone. The second is that differentia follows the species in its existence, because it is one of the things which constitute it; however, it does not reciprocate. Proprium, however, both follows and reciprocates; but understand that it follows in an accidental, not substantial, way. We, however, would aid another difference. We say: proprium exists in the summum genus, the subalterns and the infimae species, for the summum genus is characterized by being only a genus; it is the characteristic of the infima species to be a species only; and it is the characteristic of the subalterns to be both a species and a genus. But the constitutitive differentia does not exist in the summum genus, nor does the divisive differentia exist in the infima species: both of them are found in the subalterns, the constitutive in the higher (subaltern) and the divisive in the lower.)

311. There are two things in common between differentia and accident. The first is that both of them are predicated of

many things. The second is that differentia and inseparable accidents are always present to what they are present to, for rational is always present to man, and blackness always to crow. Their differences are three. Firstly, differentia comprehends species, but is not comprehended by them. Accidents, qua universals, comprehend and are comprehended, since they comprehend the species which contain them, and are comprehended because there are many accidents in one and the same subject such as Zaid, for he comprehends them, collecting their essences within himself. Secondly, differentia does not admit of variation of degree, while accidents do. Thirdly, contrary differentiae, like rational and irrational, do not mix, because one of the things substantial to the species is absolutely not transferable to the other, while the essences of the thing remain. [131] Contrary accidents, like black and white, do mix, because the subject of both is one, and both are accidents in it. Thus, one of them is transferable to the other, and the two mix. The intermediates occur between them. We have finished our examination of differentia and such as are after it. Now, let us take up the examination of the predicables which come after differentia.

312. Porphyry says that species and proprium have two things in common. The first is that both of them are always present to whatever they are present to. The second is that they coexist[132] as regards existence. For when one exists the other also exists. We, however, would state another common thing between them: It is that species and proprium are both predicated of individuals under the species. The differences between them are four. Firstly, species can be a genus of many species since it (then) is a subaltern. The proprium, however, can exist only in one species. Secondly, species is by nature prior to proprium because the former is a subject and the latter a predicate. Thirdly, species is always present to what it is present to, and in actuality. Proprium also is present always, but in potentiality, for there is a potentiality in man to laugh, although he is not always laughing in actuality. Fourthly, the definitions of the two are different, for species is predicated of many differing in number in respect of what a thing is. Proprium, however, is present to a thing (i.e., species), to it alone,

to all its individuals, and always. We would add another difference, namely, that species is intrinsic, and proprium extrinsic.

313. Between species and accident there is one agreement: both of them are predicated of many things. But the differences between them are four. Firstly, species is predicated in respect of what a thing is, and accident in respect of what sort a thing is of. Secondly, every individual has only one species, but many accidents, for one individual is white, musical, moves and so on. Thirdly, species which are in actuality are prior to accidents even if the latter are inseparable from their subjects, for the subject is to be conceived before the predicate. Fourthly, things which participate in species do so equally. Things which participate in accidents, however, may become more and less. For a person may be more in respect of whiteness than another person, whereas an individual man does not become more "man" than another. These, then, are the communities between species and what (predicables) come after it.

314. It remains for him to examine proprium and accident, and Porphyry states two things in which both agree. The first agreement between proprium and inseparable accident is that the existence of both of them is impossible without the existence of the things in which they subsist, for man does not exist without the existence of risibility, and crow does not exist without the existence of blackness. The second agreement between proprium and inseparable accidents is that both of them are always present to that which they are present to. The differences between them are two. The first is that proprium exists in one species, but accident in more than one species. For although blackness is inseparable from the crow, it exists also in coal. The second difference is that proprium is equally present to that in which it exists. Accidents, however, become more and less. And, here, let us break off our discussion of the generalities of this lesson.

315. *Porphyry*: We have thus described how genus differs from the remaining four. (He means: differentia, species, proprium, and accident.) It follows that each of the rest differs from the four (He means: each one of them other than genus differs from each of the four which differs from it.) It follows from

this that, since there are five, and each one of them differs from the four, all the five differences in four (no explanatory note) are (together) twenty. (Understand from it that, likewise, the communities are twenty). Yet, when always the things which are enumerated in succession, and two of them become less by one, because it (the one) had already been taken, and the three (become less) by two, and the four by three, and the five by four, all the differences are ten, namely, four . . . (He means: between genus and the four) . . . three . . . (He means: between differentia and the remaining three) . . . two . . . (He means: between species and the remaining two) . . . and one. (Understand: between proprium and accident.) For genus differs from differentia, species, proprium, and accident; the differences then are four. As to how differentia differs from genus we explained when we explained how genus differs from it. It remains for us to explain how differentia differs from species, proprium, and accident; and three differences arise. Similarly, as to how species also differs from differentia we explained when we explained how differentia differs from species. How species differs from genus was explained where we explained how genus differs from species. It remains for us, then, to explain how species differs from proprium and accidentand there are two differences. It remains for us also to explain how proprium differs from accident, because we have explained above how it (proprium) differs from differentia, species, and genus when we explained the differences of these from the proprium. Since, then, there are four differences between genus and the rest, three between differentia and the rest, two between species and the rest, and one between proprium and accident, all the differences would be ten, of which four, namely, those between genus and the rest (no explanatory note) we have already explained above (He means: in the previous lesson).

316. *Commentator*: When you have a number and you want to double it, substract one from it and multiply the original by the remainder, and what results from the multiplication of this, substract half of it, and the half that results is the total number of the doublets. Since we have five things we must double them, and substract one from them and four (i.e., out of the five) would remain. If we multiply five by four, the total of that would be twenty. We drop half of that (20) due to repetition, and ten would remain. This is the number of the relationships among these five predicables: four of them are between genus and the rest; three between differentia and those which come after it; two between species and those which come after it; and one between proprium and accident If you use repetition and compare each one of them with those which come before it, the sum of the relationships would total twenty. This chapter, however, seems to be useless. Both the differences and the communities would be ten.

317. *Porphyry*: The thing that is common to differentia and species is that things that participate in them do so equally, for particular men participate in man and in the differentia rational equally.

Commentator: This is the first community between differentia and species inasmuch as they are essences.

318. *Porphyry*: It is also common that they should be present always to their participants, for Socrates is always rational and always a man.

Commentator: This is the second community they have inasmuch as they are essences.

319. *Porphyry*: It is characteristic of the differentia to be predicated in respect of what sort a thing is of, and the species in respect of what a thing is. (No explanatory note). For although man exists as a sort of thing . . . (He means: if it is asked of what sort a thing is, the answer is by the differentia) . . . yet he is not so, simply . . . (he means: yet it is not always asked of him of what sort he is, but this is more proper in view of the concept of the differentia in which he is included) . . . but because when the differentiae are added to the genus, they constitute

him. (He means: what kind of thing constitutes the species are the differentiae in virtue of which it is correct that a question about what sort of ? should be answered by them).

Commentator: This is the first difference between them qua essences. As for his phrase "for, man .. .," it solves an objection which is as follows: how did you maintain, Porphyry, that species is predicated in respect of what the thing is? When we are asked about Zaid, what sort of animal he is, we answer that he is a man. The solution of the objection is as follows: Since man is composed of a genus and a differentia, genus answers a question about what the thing is, and of what sort a thing is, is answered by man. By the first because it is the genus, and by the second because it is the differentia.

320. *Porphyry*: Moreover, differentia, being in many things, exists in more than one species, like quadruped in many animals different in species, but species is only in the individuals which are under it.

Commentator: This is the second difference between them qua essences. The reason for his adding "many things" is because true differentiae are not predicated of many species, but of one species only and its individuals, like plant of earth and such as resemble it. For differentia resembles the proprium except that the former is constitutive of the essence of a thing, while the latter is extraneous to it. It is known that the differentiae of species resemble the forms in physical objects, and just as some forms are simple and others composite, so also are differentiae. The simple differentia, however, is convertible with its species, because it belongs to the species alone. As for the composite either you take it collectively or you take it one by one. If you take it collectively, it becomes true and convertible; and if you take it individually, it would not be true, and would be predicated of many species.

321. *Porphyry*: Besides, differentia is prior to its species, for man is eliminated through the elimination of rational, but rational is not eliminated though the elimination of man, since there is angel.

Commentator: This is a third difference between them qua essences. Differentia is prior by nature.

322. *Porphyry*: Also, differentia is joined with another differentia, for rational mortals are joined for the subsistence of man. Species, however, is not joined with another species so as to produce another species from the two. (No explanatory note). For a certain horse and a certain ass join in producing a mule, but horse, simply, does not join with ass to produce a mule. (He means: When an individual horse is joined with an individual ass the two produce a mule. But the species of horse and the species of ass are not joined for the subsistence of anything, because species are mental forms in the soul. Thus, the individual asses and horses in existence do not become other individuals and their nature disappears if their forms in the soul disappear or the soul would collect from the two (different individuals) one, but this is not case with regard to existence).

Commentator: This is a fourth difference they have inasmuch as they are essences. There may arise an objection which Porphyry omitted, but whose solution he stated. The form of the objection is as follows: how do you maintain that species is not joined with another species so that there would be a third thing, while we have an evidence of the horse and the ass being joined and producing a mule? The solution of the objection is this: what is deniable is only the fact that species are joined so as to produce a third species. When, however, an individual of this species is joined with an individual of that species and a third individual issues from the union, it is undeniable.

323. *Porphyry*: It is common to differentia and proprium that the things that participate in them do so equally, for rational things are equally rational, and risible things equally risible.

Commentator: This is a first community between them insofar as they are essences.

324. *Porphyry*: Moreover, it is common to both to be always present to a thing (species), and to every one of it. (He means: that to which they are present.) For

> though biped may be absent from a thing, yet the thing is described as biped. (He means: because in the thing there is a potentiality to be biped. The meaning of this is that that thing could produce bipedness.) Risible is always described as risible because of man's natural disposition for it, not because man is always laughing. (He means: because in man there is a potentiality to laugh, not because he is always laughing in actuality.)

Commentator: This is a second point of agreement between them insofar as they are as essences.

325. *Porphyry*: It is the characteristic of differentia that it is generally predicated of many species, like rational which is predicated of angel and man. Proprium is predicated only of one species, this species being that of which it is the proprium.

Commentator: This is a first difference between them which they have inasmuch as they are universals.

326. *Porphyry*: Differentia always follows those things of which it is the differentia, (no explanatory note), except that it does not reciprocate. (He means: that differentia is more general than the things.) But propria reciprocate the things of which they are predicated, because they are convertible with them. (He means: both propria and their subjects are equal in existence; one does not exceed the other.)

Commentator: This is the second difference between them inasmuch as they are essences.

327. *Porphyry*: It is common to differentia and accident that both are predicated of many things.

Commentator: This is a first difference between them inasmuch as they are universals.

328. *Porphyry*: It is common to differentia and inseparable accidents that both are always present to what they are present to, and to every one. For biped is always present to crows, and similarly, blackness.

Commentator: This is the second community between them inasmuch as they are essences.

329. *Porphyry*: They differ in that differentia comprehends but is not comprehended, for rational comprehends man. (He means: inasmuch as it is a universal.) But accidents in one way comprehend, I mean, inasmuch as they are in many things. (He means: inasmuch as they are predicated of many species.) In another way, they are comprehended on account of the fact that the subjects do not receive one accident but many accidents. (He means: they are limited to that subject in which they inhere.)

Commentator: This is a first difference between them inasmuch as differentia is a universal and accident a universal and an essence.

330. *Porphyry*: Differentia does not admit of variation of degree, while accidents do. (He means: for differentia is in all the things for which it exists equally. Accidents, however, become different due to their admitting a variation of degree.)

Commentator: This is the second difference between them inasmuch as they are essences.

331. *Porphyry*: Contrary differentiae do not mix. (He means: some do not mix with others in order that something intermediate might be produced from them: for instance, rational and irrational (do not mix). For one substantial differentia is not transferable to the other, while its substratum remains perfect). Contrary accidents, however, do mix. (He means: For instance, from black and white, grey is produced. The reason for that is that the substratum of these accidents does remain stable when one is transferred to another, and it receives intermediates. As for the differentiae their substratum does not remain stable, but changes in its own substance).

Commentator: This is a third difference between them inasmuch as they are essences.

332. *Porphyry*: These are the things common and peculiar to differentia and the rest. (He means: the remaining four.)

Commentator: He provides what has been said above regarding the communities and the differences of the differentia.

333. *Porphyry*: We have already explained in what way species differs from differentia and genus where we explained in what way genus and also differentia differ from the rest. (No explanatory note.) It is common to species and proprium to be reciprocally predicated of each other. (He means: for each one of them is convertible with the other, and its existence does not exceed that of the other.) For if man exists, then risible exists, and if risible exists, then man exists. (No explanatory note.) Risible, we explained on another occasion, must be used as potentiality. (He means: that in which there is a potentiality to be risible, not that which is risible in actuality.)

Commentator: This is the first point of agreement between them insofar as they are essences.

334. *Porphyry*: Species are always present to the things which participate in them, and likewise propria are present to the things of which they are propria.

Commentator: This is the second point of agreement between them insofar as they are essences.

335. *Porphyry*: Species differs from proprium in that species could be a genus for other things. (He means: since it is a subaltern, it is a genus for other species under it, although it is a species for such as are prior to it.) Proprium, however, cannot be the proprium of other things. (He means: Proprium of other species is equal to its species).

Commentator: This is the first difference between them insofar as they are essences.

336. *Porphyry*: The existence of species is prior to that of proprium, and the existence of proprium follows that of species, for man must exist, and then be risible.

Commentator: This is the second difference between them insofar as they are essences.

337. *Porphyry*: Moreover, species is present to the subject always and in actuality. (He means: present to its individuals.) But proprium is present at some

times . . . (He means: it exists in potentiality in that of which it is the proprium) . . . and in potentiality. (He means: always) For Socrates is always a man and in actuality, but does not always laugh in actuality, though he is always risible in potentiality.

Commentator: This is a third difference between them insofar as they are essences.

338. *Porphyry*: Moreover, things whose definitions are different are different themselves, but the definition of species is that it is that which is arranged under genus, and predicated of many things differing in number in respect of what a thing is, and things like this. The definition of proprium is that it is that which is present to a thing (species) alone, and to all its individuals and always.

Commentator: This is a fourth difference between them inasmuch as they are universals.

339. *Porphyry*: It is common to species and accident to be predicated of many things but other common features are very rare and that is due to the great distance between accident and that of which it is accident. (He means: since the nature of each of them is unusual and different from the other.)

Commentator: This is the one point of agreement between them which they have qua universals.

340. *Porphyry*: The characteristics of both of them are these: species is predicated of the things of which it is the species in reference to what a thing is; (He means: if it is asked about what every individual is, the answer is by the species) while accident is predicated in reference to what sort a thing is of, or how it is. (He means by the expression, "what sort of thing and how it is," that the first is the characteristic of the inseparable, the second of the separable, accident. For if it is asked of what sort the subject is, the answer is by the inseparable accident and by the state of the separable.)

Commentator: This is the first difference between them qua universals.

341. *Porphyry*: Each substance has only one species, but many accidents, separable and inseparable. (He means: each individual has one species, but many accidents, separable and inseparable, combine in it.)

Commentator: This is the second difference they have inasmuch as they are essences.

342. *Porphyry*: Species are conceptually prior to accidents, even if they are inseparable. (He means: it is because accidents exist only in the individuals of the species.) For there must be the subject so that something should happen to it. (He means: the subject of accident must exist before the accident.) The generation of accidents, however, is posterior to the species, and their nature is extraneous. (He means: their nature is extraneous to the subjects of which they are accidents.)

Commentator: This is the third difference which they have inasmuch as they are essences.

343. *Porphyry*: Participation in species is equal, but in accidents, even if they be inseparable, is not equal; for the color of a black person in terms of the blackness may be more or less (black) than the color of another black person.

Commentator: This is the fourth difference they have inasmuch as they are essences.

344. *Porphyry*: It remains for us to describe the cases of proprium and accident, for we have already described in what way proprium differs from species, differentia and genus. The thing common to proprium and inseparable accident is that without them those things in which they exist will not be, for just as man does not exist without risible, so a black person does not exist without blackness.

Commentator: This is the first point of agreement between them which they have inasmuch as they are essences. You must not understand that it is impossible for the thing to exist without them (propria and accidents) or that the essence of the thing is composed of them, but that they are inseparable from

it, though not in thought but in existence, since in thought it (proprium or accident) may disappear.

345. *Porphyry*: And just as proprium is present to all the individuals of a thing (species), and always, so is the inseparable accident.

Commentator: This is the second point of agreement between them inasmuch as they are essences.

346. *Porphyry*: They differ in that proprium is present to one species alone, like risible to man, but inseparable accident like, say, black, is not present to a black person alone, but also to a crow, to coal, to ebony, and to certain other inanimate things. (No explanatory note). In predication proprium reciprocates that of which it is the proprium. (He means: it is convertible with that of which it is the proprium and is equal to it.) As for inseparable accident it does not reciprocate that to which it is present. (He means: rather, it exceeds that thing, for blackness exceeds a crow.) Since proprium belongs to one species, and to all the individuals of that species it is convertible, and is predicated equally. (He means: the reason for proprium's covertibility is merely that it is present to its species alone and to all the individuals of that species.)

Commentator: This is the first difference between them which they have inasmuch as they are essences.

347. *Porphyry*: The participation in propria is equal. (He means: the things which participate in propria do so equally.) But the participation in accidents is more or less. (He means: because accidents existing in things become less and more.) There are other things common and peculiar besides those we have explained, (He means: for these five predicables) but these are sufficient for their distinction, and the investigation of their community. (He means: in accordance with this book).

Commentator: This is the second difference between them which they have insofar as they are essences. As to his statement that there are other things common besides these, it is

because there is an exhaustive discussion of them in the *Topics*. [133]

With this let us break off our detailed discussion of this lesson, and, in general, let us bring our commentary on the *Eisagoge* to a conclusion.

Commentary

1. I intend in this introductory note to discuss the question of the predicability of species (εἶδος) and whether or not those historians of logic who condemn Porphyry for making the species a predicable are justified in so doing. A recent writer on Neoplatonic logic, A.C. Lloyd, stated that "whoever made the species a fifth predicable, it was not Porphyry. The *Isagoge* is not an introduction to the *Topics* but to the *Categories*, which are logically prior to the *Topics*, and the 'quinque voces' are terms considered necessary to the understanding of the *Categories.* "[1]Objections may be raised against Lloyd's interpretation.

Firstly, I do not think it is correct to maintain that the *Eisagoge* is concerned merely with terms necessary to the understanding of the *Categories*. Although it is plausible to suppose that *Porphyry's* intention was to write the *Eisagog*e as an introduction to the *Categories*, it is equally plausible to suppose that he may have looked on it as an introduction to the whole logic of Aristotle, since the *Categories* itself was, prior to the work of Porphyry, regarded as isagogic to the logic of Aristotle. Later commentatorsGreek (Alexandrian), Syriac, Arabic and Latinall regarded Porphyry's work as an introduction to the whole logic of Aristotle. Ammonius, for instance, rightly observed: "The Book is useful to the whole of Philosophy .. . for, if it is an introduction to the Aristotelian *Categories* which is about incomplex terms, these being the starting points of logic, it is clear that the *Eisagoge* is prior in terms of the order of logic."[2] Hence all the extant Greek commentaries start with definitions of philosophy. The *Eisagoge* is about both philosophy and logic.

The subject matter of the *Eisagoge* leaves one in no doubt that the work is not just about terms or concepts relevant to

the understanding of the *Categories*. For Porphyry says at the outset of his work that he is concerned also with such logical questions as definition (ὁρισμός,ὅρος), division (ἀποδεῖξις)and demonstration (διαίρεσις)which are methods of logic, or "dialectical methods" (including ἀναλύσις), as they are referred to in the Greek commentaries. These "dialectical methods" are of course not treated in the *Categories*. But knowledge of the predicables, Aristotle seems to say, is relevant to the explication of these methods, as in fact explained by Ibn al-Tayyib in paragraphs 15 ff., 30 and 32 (see also para. 217 [Porphyry's section] and Commentary, secs. 27 and 28).

Secondly, as Lloyd rightly points out, the *Eisagoge* is not an introduction to the *Topics* in which the doctrine of the predicables is discussed. The predicables, as stated by Aristotle in this work are four: genus, definition, proprium and accident. Porphyry of course must have been acquainted with these predicables for his definitions of the genus, proprium and accident in the *Eisagoge* are taken from the *Topics*. (Thus, if Lloyd's point is that Porphyry, in listing the 'quinque voces' at the opening chapter of his work, was not thinking at all of the *Topics* which is, or because it is, posterior to the *Categories* [Porphyry's present concern], he is surely mistaken). However, we must note that neither the differentia nor the species was included in the original, i.e., Aristotle's, list of the predicables. But Porphyry added these two (note that he did not add *only* species) dropping one of the original namely, definition, which is rather puzzling since Aristotle refers to 'definition' a number of times in the *Categories* using the word λόγος rather than ὁρισμός, ὅρος ; and yet the *Eisagoge* is said to be concerned with terms relevant to the understanding of the *Categories*. The *Categories* may be logically prior to the *Topics*, but if certain concepts treated elsewhere are relevant, paradoxically, to its understanding, such concepts must be explicated. Hence the introduction of the doctrine of the predicables enunciated in the *Topics*. It is Porphyry's understanding and interpretation of this doctrine that leads him to make species a predicable, an action which, therefore, was not accidental but entirely intended. An attempt will be made in this

note to explain why he did that, and the implications of his action will be brought out. But at the moment let us admit that Porphyry made species a fifth predicable; such an admission has, in fact, already been made by Porphyry's modern critics.

However, before we feel that the way is cleared for the presentation of our own points, let us dispose of Ockham's[3] criticism of Porphyry, which is that in writing the *Eisagoge*, as prefatory to the *Categories*, Porphyry failed to distinguish between signification and predication. Ockham's point is that "since . . . a sign is posterior, qua sign, to that which it signifies, and since terms of second intention (i.e., genus, species, etc.) are signs of terms of first intention, it follows that an understanding of the predicables is posterior to the understanding of the distinctions between terms of first intention made in the Categories."[4] This criticism misses its mark because in elucidating the significatory terms (terms of first intention) of the *Categories* Aristotle makes mention of the predicables, but does not explain what they mean. Moreover, the relation of the prediables to the *Categories* is such that "the accident, the genus, the proprium, and the definition will always be in one of these categories." (*Topics* 103b 24-25). This being so, it was not unreasonable that Porphyry should preface a discussion of the *Categories* with explanations of what the predicables are. To make use of the elements of one doctrine to explain another (where relevant) is not necessarily to confuse or identify the two.

One of the doctrines in the *Eisagoge* which are markedly Porphyrian is, as we have seen, the addition of species as a predicable and its apparent substitution for the Aristotelian definition (ὅρος) in the list of the predicables. It has often been argued that in listing species with the predicables Porphyry misinterpreted Aristotle. Ross, for instance, after listing the four Aristotelian predicables, says, "This is Aristotle's classification of predicables which Porphyry later muddled hopelessly by reckoning species as a fifth predicable."[5] William and Martha Kneale say, "he (Porphyry) is the source of a misinterpretation of Aristotle's doctrine of the predicables which produced some confusion in later times."[6] And Joseph also says that Porphyry's list was due to his "losing

sight of the principle on which the division was made." 7 All of these criticisms would be legitimate if Porphyry were making a commentary on chapter four of Book One of the *Topics* which is the *locus classicus* of the Aristotelian doctrine of the predicables. For in that chapter Aristotle states the different relations in which a predicate may stand to a subject, and assumes that species are the subjects to which predicates are attached. Species was, therefore, not included in the classification of predicates, since it would be trivialand in any case not a predication (but identity)to say "man (species) is man." But this should not be taken to mean that species is always a subject and cannot be a predicate. For, as we shall see presently, Aristotle himself makes species a predicable where he is considering individuals as the subjects; and individuals are in his system the paradigm cases of subjects.8 The addition of species as a predicable gives due recognition to the existence of singular propositions, indicating that not all propositions are general, with species or concepts as subjects.

However, Porphyry was not, be it noted, writing a commentary on that *locus classicus* of the doctrine of the predicables. He tells us at the very outset of his book that a knowledge of the predicables is necessary for the understanding of the *Categories* of Aristotle. Yet although Aristotle makes reference to them (except proprium) in the *Categories*, he does not actually define or explain them as he does later in the *Organon* and the *Metaphysics*.

That Aristotle himself thinks that species is a predicable is clear from certain explicit statements of his in the early part of the *Categories* and the later part of the *Topics*. "Man is said of a subject, the individual man" (*Cat*., la 21). "Man is predicated of the individual man." . . . "(*Ibid*., 16 12-15). ". . . and as for secondary substances, the species is predicated of the individual, the genus both of the species and of the individual" (*Ibid*., 3a 37-39). There are other statements in the *Categories* which indicates that species is a predicable, but these should be sufficient for our purpose. In the latter part of the *Topics* also Aristotle says that species is a predicable. In 111a 33-34 he says, "(Since) of all those things of which the genus is pre-

dicated, one of its species must necessarily also be predicated (κατηγορεῖσθαι)."This is repeated in 121a 26-27, 122a 31-39, 122b 1-2, 127a 33-35. In all these statements the word κατηγορεῖται("is predicated") is used in reference to species. Species, then, is a predicable according to Aristotle, who, in this way, recognized singular propositions also.

A further point is that, except in two cases, whatever is a species is at the same time a genus and vice versa. This is noticeable from the famous Tree of Porphyry. To give Porphyry's own example. "As for body it is a species of substance but a genus of animate body; animate body is a species of body but a genus of animal" (i.e., since every animal has a body). 9 Similarly, man, which is a species of animal is also a genus, i.e., a subaltern genusin relation to the subordinate species of different men (such as white men, black men, yellow men, etc.) into which the genus man can be divided. The two exceptions are the highest genera (summa genera) which are not species, and the lowest species (infimae species) which are not genera. Apart from these exceptions, what goes for the genus goes for the species also. For, if the genus man is rational, the species man must also be rational. Thus both species and genus are predicables and state a part of the essential nature of the subject (*Topics*, 122a 37-39). Aristotle is aware that species can be predicated *as* genus (*Topics*, 122a 31, *Cat*., 2b 22). It seems, therefore, that when Aristotle speaks of genus he includes the species by implication. It would be recalled that in the *Categories* both species and genus make up the secondary substances; and this is not by chance.

Moreover, species is a universal concept, for many things (i.e., individuals) participate, and are included, in it; and hence, like all universal concepts, it can function as a predicate and not only as a subject: "But man and animal are said of many things" (*Cat*., 3b 17-18). The upshot of the above argument is surely that Porphyry, in listing species as a predicable, did not misinterpret Aristotle; he merely brought into the open a fact implicit in Aristotle's doctrine.

But perhaps the set of questions that requires to be looked into is: why does Porphyry substitute species for the Aristotelian definition? Why does he not merely add species to the list

of predicables? Did he actually intend to substitute species for definition? Aristotle says in the *Topics*, 101b 39, *Anal. Post*., 90b 31 and in other places that definition is a statement of the essence (τὸ τί ἦν εἶναι)of something. In *Met*., Z, 12 he says that the definition is constituted by two elements, genus and differentia. *These same two elements between them constitute also the species* (e.g., *Topics*, 14b 8; *De Part. Animal*., 643a 24; *Met*., 1057b 7). In other words, the union between genus and differentia generates both definition and species. Are these two resultants identical?

In *Met*., Z, 12 Aristotle says that the genus is related to its species as matter is to form, matter being potential and form actual. And just as matter does not exist apart from the form so genus does not exist apart from its species. Thus definition consists in the actualization of the genus in the (final) differentia. Now, the differentia is that part of the essence of any species which distinguishes it from other species in the same genus. This differentia, it must be noted, finds its realization or is conceivable only within the category of the species: it is because we know that there are kinds (species) of substancesman, horse, reptilewhich make up the animal kingdom that we can ever think of finding out what differentiates them. Suppose the correct definition of man is that "he is a rational animal." The definition is effected by the fact that there are other nonrational species of the genus animal. The statement "man is an animal," does not express the essence of man (whereas the definition indicates the essence of the definiendum), since horse, too, is an animal. Without the existence of species, it would not be possible to delineate the differentiae and hence the definition.

Since, according to Aristotle, genus is analogous to matter (e.g., *Met*., 1038a 5-6), and "that to which the differentia or quality belongs is the substratum, which we call matter" (*Ibid*. 1024b 8-9), and since matter is a potentiality (*De Anima*., 412a 10, 414a 16), it follows that the differentiae exist in the genus in potentiality. In fact, it seems that in *Met*., 1045a 20 ff. Aristotle is saying that the genus is the potency of the differentia. Ammonius was quite right when commenting on the nature of the existence of the differentia, he said, "It has already been

said that according to the Peripatetics the differentiae exist potentially in the genera prior to their existence in the species." [10]

All this means that it is only when the differentiae are in the species that they can be said to exist ἐνεργείᾳ (i.e., in actuality) and can be reckoned with in definition. It follows, then, that species is "remotely"[11] the pivotal element in definition or essence, since the conception or generation of the genus and the differentia (which between them constitute the essence) is effected only within the category of the species. In, for instance, *Met*., 1032a 12, 1032b 1 and 1041b 6-9) Aristotle identifies essence (τὸ τί ἦν εἶναι)with εἶδος , i.e. form, which in Aristotle, is analogous to species, just as matter is to genus. In 1036a 28 definition is of the form (as of the universal).

By stating that the communion between genus and differentia produces the definition or essence of something, Aristotle, I think, includes the species by implication. If this is correct, Porphyry merely brought out the implication. We may note, incidentally, that Aristotle did not explictly state differentia as a predicable, but he added that insofar as it is generic in character it should be ranged (or ranked) together with the genus (*Top*., 101b 19). Thus in making differentia a predicable, Porphyry made explicit what was merely implicit in Aristotle's position. Perhaps Aristotle had had an earlier vision of Occam's razor and so did not want to multiply *praeter necessitatem* his predicable entities. To my knowledge, Porphyry has not been condemned for listing differentia with the predicables, but he has been condemned, unfairly, for making a similar explicit statement on species.

I must say, in conclusion, that definition and species are not intersubstitutable concepts: they are not logically identical even though they are both generated from the communion of the same elements. Definition is predicated convertibly, but species like genus, is not predicated convertibly. But perhaps in making species a predicable Porphyry did not imply a denial of the predicability of definition, thus braving a visionary Occam's razor. (Perhaps when Ross, Lloyd and others speak of the species as a "fifth predicable" what they mean is that

Porphyry added species to Aristotle's original '*quattuor voces'* which of course included definition).

For the views of the Muslim philosophers on the number of the predicables see Commentary, sec. 13.

2. The word *sura* ("form") translates the Greek εἶδος which in Arabic is used for both the Aristotelian form and the Platonic Form. However, whereas the Greek word also means "species" (see note 64 below), the Arabic word means only "form"; *nau'* is the word invariably used for "species." *Mithal* is another word used in Arabic philosophy also to refer to the Platonic Form. This word, which means examplar, paradigm, indicates only one characteristic of the Platonic Form, i.e., the paradigmatic (παράδειγμα ,e.g., *Phaedo* 75b, *Parmenides* 132d, *Euthyphro* 6e, *Republic* 472c, 592b).

3. The word translated "abstract" is *istanbata*. It is used in several places in the text, for instance in paragraphs 7, 45 and 91. In all these places it means to "abstract," "draw out," "elicit." The word also means to "discover," and in contexts of syllogisms it means to "infer" or "deduce" from.

In al-Farabi's work on "The Intellect" [12] this word is used twelve times. In the Latin translation of this work[13] nine are rendered by the words "adinvenire" and "invenire": to "discover," to "find out"; and three by the word "elicare": to "draw out," "elicit." To translate *istinbat* by "discovery," however, would be contrary to the impression conveyed by Ibn al-Tayyib's text. For "discovery" presupposes the prior existence of the thing discovered (or to be discovered). When we say Columbus discovered America, we mean, of course, that America did exist prior to Columbus' expedition. Thus, if we were to say that the form is 'discovered' by the soul, this would commit Ibn al-Tayyib to admitting the Platonic Formswhereas he says (para. 51) that "absolute animal does not exist"for only a Platonic Form, because of its prior existence, is discoverable by the contemplating and the reminiscing soul. But our author, in this text, is no realist.

Apart from its meaning of "discovery," *istinbat*, in Avicenna, according to Goichon, is "le resultat obtenu par le *hads*, intuition intellectuelle."[14] In Ibn al-Tayyib, however, there is no question of the acquisition of knowledge by immedi-

ate apprehension without reference to observation, experience, or inference. He appears as a thorough empiricist and abstractionist (see Commentary, sec. 5, below). For him the soul or the mind (*'aql* = νοῦς is sometimes used, instead of *nafs*, with the same verb, as in paragraph 121) constructs a unity, that is, of the form out of a sensible manifold. (Two other words which he uses to mean "abstract" are *intaza'a*, paras. 4 and 27, and *jarrada*, para. 51.)

4. The word *mahmul* which means "predicate" (κατηγορία.κατηγορούμενον) translates the Greek word φέρεσθαι which is used by Ammonius (e.g., p. 93, 18), Elias (e.g., p. 87, 18), and David (e.g., p. 99, 15) [15] to mean "to be predicated." The Arabic *humila* (for *mahmul* is passive) and the Greek (both in the passive voice) mean "to be carried or borne." Aristotle does not use this word in the technical sense of predicate. In *Met*., 1062a, *Nic. Ethic*, 119a 34, he uses the active form of the word to mean "to apply" a term (ὄνομα) to something; he uses κάτηγορεῖσθαι and λέγεσθαι to mean "to be predicated of." The latter word is used by this and other Arabic authors with the same meaning of "to be predicated of." It often occurs in the form *yuqalu*, "is said of," "is asserted of" (+ *'ala*). Incidentally, the active participle, *hamil*, is also used to mean a "subject," although the word *maudu'* is more often used.

5."*Ya'malu laha ma'na al-'umum . . . . ma yushabihaha*." This sentence is obscure due to the ambiguities in the pronoun *ha* (used five times). Lit.: "it (mind) makes for it (sensible form) the concept of universality by making it general on account of that form which is abstracted from the individuals and on account of all that resembles it (form)."

What the author is perhaps saying is this: that through sense-perception the sensible forms of particulars are conveyed to the mind. Becoming aware both of the likenesses (paragraphs 5 and 7) and of the common elements in these sensible forms, the mind splits and classifies them. The form is, at this stage, an intelligible form which then becomes a ready-made category for arranging and understanding the data of sense. He says (in paragraph 27 below), ". . . and from the

individual and intelligible forms the mind derives universals." Ibn al-Tayyib's conception of the form or the universal concept is, thus, neither Platonic nor Aristotelian. It is more akin to the Epicurean and Lockean systems. He appears, therefore, as an abstractionist. By "universal natures" (para. 4) I think he means the common elements or characteristics discerned by the mind in the sensible forms of the particulars using, as basis of classification and judgment, the universal concept or the intelligible form which, in turn, is derived from the particulars. There is circularity involved in this abstractionistic process of forming concepts, the avoidance of which was, in my view, one of the reasons for Plato's belief in the self-existing Forms.

6. The doctrine that genus resembles matter is Aristotelian. See for instance, *Met*. 1038a 5-6, 1024b 8-9. The Arabic *hayula* (matter) is a direct translation of the Greek ὕλη.

7. *"Min tariq ma huwa*," "in respect of what a thing is," is the equivalent of the Greek phrase, ἐν τῳ τί ἐστι, used by Aristotle and the Alexandrian commentators. It can also be rendered "in the category of essence." It indicates an essential predication. The other phrase, in connection with predication, is "*min tariq 'ayyu shay' huwa*," "in respect of what sort a thing is of" it is used above in paragraph 7 and below, paragraphs 9, 10, etc. with regard to the differentia, proprium, and accident. (Later on the author puts up a strong case why the differentia should be predicated in the category of essence rather than of quality. See paragraphs 225 and 226, and Commentary, sec. 117.) The Greek equivalent of the phrase is ἐν τῳ ποῖον τί ἐστι i.e., "in the category of quality."

8. The word *maudu'* generally used for "subject" or "substratum" translates the Greek ὑποκείμενον, ("that which underlies"). The word is used in two senses: (a) it means the subject of which something is predicated; (b) it means the substratum in which something inheres or is present. The first is a logical, the second a metaphysical principle.

9. The author is right in limiting the present reasoning to the infimae species, because the subaltern species could be genera and, hence, would not comprehend individuals but

the species under them. This would be noticeable from the famous Tree of Porphyry (see paragraph 137 of text).

10. Ammonius (p. 33) and David (pp. 98-99) discuss the order of the predicables, saying that the substantial ones (οὐσιώδης: genus, species, and differentia) must have priority over the nonsubstantial (ἐπουσιώδης) i.e., proprium and accident).

11. Since the author uses substratum here in the sense of matter, his view that it is always prior to the form is un-Aristotelian.

12. In speaking of that which is "above" and "below" the author obviously has the method of division in mind. On this question of the priority of species or genus, see Commentary, sec. 127, below.

13. The author is certainly aware of *Topics*, Book 1, chapter 4, the *locus classicus* of the Aristotelian doctrine of the predicables. Here, as well as in paragraphs 174 and 225 below, he is aware that definition (ὅρος, *hadd*) is a predicable, and yet accepts Porphyry's list. Both Avicenna [16] and al-Farabi[17] discuss definition, but do not mention that it is a predicable. It seems all the Arabic philosophers accepted species as a predicable.

14. "The dialectical methods": *turuq al-bayanat* is a translation of αἱ διαλεκτικαὶ μέθοδοι which expression is used by Elias (p. 38) and David (pp. 88, 90, 97 and 103) to refer to division, definition, demonstration, and analysis. Commenting on *Philebus* 16 where Plato talks of the method of division, Damascius says: "Socrates' subject is primarily the methods of division and analysis, but ultimately the whole of dialectic, of which these methods are parts."[18] Later Damascius refers to them as αἱ τέτταρες μέθοδοι. These four methods constituted Plato's dialectic.

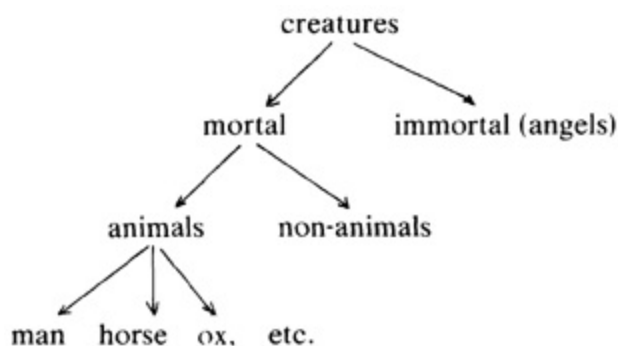
15. Let us speak briefly about the nature and origin of each of the "dialectical methods." We learn from Aristotle (Met. 987b 17-30, 1086b 3) that Socrates "was the first to fix thought on definitions," for "he was seeking the essence of things which is the starting point of syllogism." Thus, a definition is an expression which indicates the precise nature or essence of the definiendum.

The Greek word for definition, (ὁρισμός, ὅρος), like the Latin *diffinitio*, and the Arabic *hadd*, means setting limits to something, marking out by boundaries: it is only when the boundaries or limits of a word have been marked out or determined that its exact meaning would stand out clearly and could be known and understood objectively.

Division, (διαίρεσις) i.e., logical Division, is a method whereby a genus is broken up into its constituent species. It was a logical method certainly created by Plato to solve the problem of definition. The method starts with a summum genus and stops with infimae species; between the two extremes are the subaltern genera. The division of a genus into species is effected by means of differentiae, which make the species definite.

Suppose we wish to define a species A (and it must be noted that only species or concepts can be defined; this is one of the reasons why division must stop with the infimae species), we take a higher or wider class B (genus) under which A can be subsumed. B is then divided into two mutually exclusive subclasses D and C, which have contrary characteristics. On the assumption that A has the characteristic C, we continue the process in the same manner as before, subdividing C, into E and F, F being on the same side as C; F is subdivided into G and H. H being on the same side as F (and, therefore, also as C), and so on. We would find the definition of the species A by considering the characteristics C, F and H.

This method of logical division is amply illustrated by Plato in the *Statesman, Phaedrus, Sophist*, and the *Philebus*. In a later dialogue, namely, the *Philebus*, Plato becomes aware of the difficulties which this method would come up with if the universal Form or Kind to be divided has a separate existence from its subclasses. Aristotle's method of definition per genus et differentiam was an adaptation of the Platonic Division. We shall have more than one occasion to speak of this method of logical Division.

Demonstration is a deductive proof by syllogism. It is elucidation from certain given premises or propositions by discerning the logical connections between them. It is possible to discern a syllogistic method in Plato's logical Division. Let us illustrate this with a diagram:

Now, in a syllogism (of the first figure) we would have:

All animals are mortal,
Man is an animal,

∴ Man is mortal.

Mortal is the major term which is the widest or the highest class which comprehends many things (animals and non-animals). Animal is the middle term which is intermediate between the highest term and the lowest, namely, man, which is the minor term.

In the *Prior Analytics*, 46a 31-33 Aristotle recognizes that the syllogistic method is discernible in the Platonic method of division: "It is easy to see that the process of division by genera is but a small part of the method we have described; for the division is, as it were, a weak syllogism." A "weak syllogism" must be strengthened. Although the Platonic method of "syllogistic reasoning" may have undoubtedly given the impulse to Aristotle's own sophisticated syllogism, yet the credit of having established a formal and articulate system of demonstrative syllogism (without having to go through the rungs of a ladder of Division to find out where each of the various terms of syllogism is put and whether or not the predicate is 'above' the subject of which it is predicated) must be given to the Stagirite: "Our purpose was to discover some faculty of reasoning about any themes put before us from the most generally accepted premises that exist." (*Soph. Elenchi* 183a 3738).

Analysis is the resolution of something complex into its simple elements. In Aristotelian logic, ἀνάλυσις means the breaking up or reduction of various argumentative statements into the moods of the three figures (see e.g., *Anal. Pr*. 47a 18, 49a 19). The process of analysis presupposes that there is an argument which does not (apparently) conform to any logical form and which, therefore, requires to be broken up into its constituent propositions, and these into their component terms.

16. "By means of a cause" refers to the middle term of the syllogism.

17. Ibn al-Tayyib's definitions of the διαλεκτικαὶ μέθοδοι very closely follow those we find in the Alexandrian commentaries. Elias says, "It is characteristic of division to make one many, such as the division of animal into rational and irrational, mortal and immortal. The characteristic of definition is the opposite: it makes many one, i.e., it takes animal, rational, and mortal, and defines man. It is characteristic of demonstration to show that some thing belongs to another by means of another middle term. For instance, if we wish to show that man is animate we take the middle term animal and thus syllogize: If animal is animate, and man is animal, it should certainly follow that man is animate. Or, again: Man is animal, animal is substance; therefore, man is substance."[19] On analysis Ammonius writes: "The function of analysis is to break up complex things into the simple (elements) of which they are composed . . . such as (the analysis of) man into head, hands, and feet, and these into bones, flesh, and nerves, and these into the four elements, and these into matter and form . . . For analysis takes man and analyzes him into parts, and these into the humors, and the humors into the elements, and these into matter and form, for the elements are composed of matter and form."[20]

18. The predicables are required in demonstrative syllogism qua universals. In the *Post. Anal*., 77a 7-9 Aristotle says that without universals there will be no universal term; "and if there is no universal there will be no middle term, and hence no demonstration." Again, in the *Topics*, 163b 34-164a 11 Aristotle finishes his discussion of the importance of univer-

sals in arguments by saying: ". . . because it is impossible to reason (συλλογίσασθαι) at all without employing the universal." Thus, it is inasmuch as any universal predicate falls within one of the predicables that the latter can be said to be necessarily involved in demonstrative syllogisms. By "the medium of demonstration" Ibn al-Tayyib certainly means the middle term of the syllogism, which provides the connection between the extreme terms. In his commentary on the *Categories*, he writes: "The aim of this logical art is merely to inform us of the way and method by which we come to know, in a positive way, the hidden things by means of things that are evident. This is demonstration." [21]

19. In his Commentary on the *Categories*, the author writes: "Since the premises are composed of matter and formand their form consists of truth and falsehood, and their matter consists of the incomplex significatory termshe (Aristotle), therefore, instructs us about their form in the book of the premises (i.e., *De Interpretatione*), and about their matter in the *Categories*."[22] Again, he says: "Likewise, before syllogism he (Aristotle) spoke of the premises, and, before the premises, of the incomplex terms, because the latter are the starting points (or principles) of the former."[23] A demonstration (or syllogism) is made up of propositions which themselves are composed of the incomplex terms of the *Categories*. The role of the *Categories* in demonstration, is, thus, indirect.

20. The theory of meaning adumbrated here is the denotational (or referential) theory of meaning. By "the acts of nature" the author means either the objects or events in nature which are expressed verbally or linguistically; or, that since objects have natures of their own and since there are, as some think, determinate and natural relations between objects and their names, therefore, meanings are set up according to the course of nature (*secundum cursum naturae*). The latter view would be similar to Plato's thesis in the *Cratylus* that "things must be supposed to have their own proper and permanent essence; they are not in relation to us, or influenced by us, fluctuating according to our fancy, but they are independent, and maintain to their own essence the relation prescribed by nature" (*Cratylus* 386d-e). "Things have names by nature,

and not every man is an artificer of names, but he only who looks to the names which each thing by nature has, and is able to express the true forms of things in letters and syllables" (*Ibid*., 390e). Epicurus also thought that language exists by nature: "Hence even the names of things were not originally due to convention." (*Diog*. *Laert*. X, 75).

21. On the evidence of Aristotle (*Met*., 985b 23-986a 17, 1090a 21; *Diog*. *Laert*. vol. 2, 8, 25) we learn that the Pythagoreans held that the principles of things are numbers, and that the soul was a property of number. They held also that the soul was a self-moving number, [24] and that the soul was a harmony of the parts of the living body,[25] but this does not mean that it is "composed of harmonic numbers." It is Plato who is reported to have believed that "the soul is an intelligible substance, self-moving, and moves according to a harmonic number."[26]

22. This view of Plato is in the *Timaeus*, 35ff. where he describes the composition of the world soul. The soul was composed of three things: Existence, Sameness, and Otherness (or Difference). The world of the Sameness is of course the world of immutable and eternalor what Ibn al-Tayyib refers to as "incorruptible"Forms, while Otherness is the world of sensibleor what Ibn al-Tayyib refers to as "corruptible"things of the changing world. Thus, possessed of the characteristics of both worlds the soul must occupy a position intermediate between the intelligible and the sensible world: on the one hand the soul resembles the Forms in being "immortal, indestructible, ever constant . . ." (*Phaedo*, 88b); on the other hand the soul has life and intelligence, and life and intelligence are not changeless (*Sophist*, 248e-249a-b). In the *Timaeus* the God is identifiable with the Demiurge (69c). The idea of the God splitting "a straight line by length" and the construction of the circles of the Same and the Other is in 36b ff. The movement of the soul of the Same takes place in the sphere of the fixed stars (40a-b), and that of the Other in the orbits of the planets (38e-d). Aristotle says: "After compounding the soul-substance out of the elements and dividing it in accordance with harmonic numbers . . . the Demiurge bent the straight line into a circle, this single circle he divided into two

circles united at two common points; one of these he subdivided into seven circles. All this implies that the movements of the soul are identified with the local movements of the heavens" (*De Anima, 406b 26-407a 2*).

23. In that passage of the *Sophistici Elenchi* (166 a37) where Achilles' name is mentioned, Aristotle talks of the division (διαίρεσις)of a word or an expression and the effect of this word-division on the meaning of a given statement. One of his examples is: "The noble Achilles left 150 men." But the Greek form of the statement is: "50 men 100 the noble Achilles left" (τὸ πεντήκοντα ἀνδρῶν ἑκατὸν λίπε δῖος Ἀχιλλεύς). Thus, in the Greek the expression "150" is divided, and the statement may be taken as "the noble Achilles left 150 men," or "the noble Achilles left 100 men 50" (i.e., he reduced their numbers from 100 to 50). Thus, the position of the word "100", which is the result of dividing the expression "150," is wrong, and it affects the logic of the statement. Aristotle's other example in that passage is: "Free I made thee a slave." Here, it is not clear whether the word "free" goes with "I" (i.e., the subject) or with "thee" (i.e., the object). That the position of a word could affect the meaning of a statement is what Ibn al-Tayyib wants to show in his reference to the *Sophistici Elenchi*. It is, as he says, a "badness of style."

24. Aristotle's discussion of the "four causes" is in the *Physics*, Book 2, chapter 3. Ibn al-Tayyib's account of the final cause is different from Aristotle's in *Physics*, 194b 33-35; its division into proximate and remote is not found in Aristotle. The Arabic word which is used by the author and which I have translated "final" is "*ghaya*" which means "end," a word which can be taken to mean: (a) either "the extremity, finish, limit" of an action (e.g., end of a physical exercise), or (b) the "purpose" or "aim" of an action (e.g., the purpose of taking physical exercises). The author's definition of the "final cause" seems to indicate that he understands "end" in the first sense. Aristotle understands it in the second sense, for although the word he uses, τέλος like *ghaya*, has both senses of "end," his phrase "for the sake of which," ἕνεκα οὗ(*Physics*, 194b 34) indicates clearly that he uses "end" in the second

sense: "Further, the final cause is an end, and that sort of end which is not for the sake of something else, but for whose sake everything else is . . ." *Met.*, 994b 9-10 (also 996a 26, *Eth. Nic.*, 1094a 18).

The author's division of the final cause into proximate and remote is also puzzling. It seems that by "the proximate final cause is the form" he means this: that when a builder wants to build a house he first makes a model (or, plan) of the house, that is, on paper; the builder then looks on this model as he builds the house. This "potential" form of the house becomes actual when the house has been built. Whereas the formal cause is actual, the proximate final cause (which is also a form) is the "potential" form. This is a plausible explanation for the author's unexplained statement. With regard to his statement, "the remote (final cause) is the act which issues from the form," he probably means the process of constructing the house when the builder would be looking on the model-form. What the author calls "proximate final cause," i.e., what I call the "potential" form, is to be distinguished from the material and the formal causes. But if my explanation of what he calls the "remote final cause" is correct it does not seem to be different from the efficient cause. On the whole, the author's account of the final cause, with its division into proximate and remote, is not clear.

25. *Dhat*, here, as in paragraphs 88 and 92, means "a thing" (*shay*). It translates the Stoic τί.

26. χρυσαόριος , which is compounded out of χρυσός (gold) and ἄορ (sword), means "with a sword of gold," not just "golden." Chrysaorius was "a high official of Rome who was engrossed with its political affairs" 27 (see paragraph 261 of text).

27. The letter "*waw*" (paragraph 23), translated "both," is followed by another "waw" at the beginning of paragraph 31. The two "waws" translate Porphyry's . . . τὲ καὶ "both . . . and." The author is right in saying that the "*waw*" is used in order to show that the idea of "necessity" embraces the knowledge of both the predicables and the dialectical methods.

28. In pseudo-Elias we have the following account: "It is asked why the conjunction 'and' is added."28 He says that it

is because this present book is helpful both for the Aristotelian *Categories* and the methods of demonstration. (See paragraph 32 of text.)

29. The author is commenting upon the word "necessary" (ἀναγκαῖος)used by Porphyry. Ammonius (pp. 24-25) also discusses the meaning of "necessary," and divides it into the "useful" (τὸ χρησίμον)and the "coordinate" (τὸ ἀντιδιαιρούμενον).He concludes that "necessary," as used here by Porphyry, means "useful." Ibn al-Tayyib seems to be saying that whatever is necessary is also useful, but not vice versa; it is, for instance, useful to take drugs, but it is not necessary. He, like the Greek commentators, interprets Porphyry's "necessary" to mean "useful."

30. In addition to meaning "definition," the word *hadd* also means "term" of a proposition or syllogism. The Greek word, ὅρος which is translated by the Arabic word *hadd*, is used by Aristotle to mean also "term" of the syllogism, see *Anal. Prior*, 24b 16, 25b 32 and 35. In this paragraph the author is referring to the terms of the syllogism.

31. Ammonius (p. 36), Elias (p. 37), and David (pp. 89-90) discuss the order (τάξις = tartib)of the dialectical methods, and place them in the following logical order: (a) division, (b) definition, (c) demonstration, and (d) analysis. By placing analysis after division our author changes the order, (but see paragraph 30 above). The Greek commentators point out that since the constituents of the definition, namely, genus and differentia, are obtained through division, therefore, division must logically precede definition. And since, as Aristotle points out in the *Posterior Analytics*, 72a, one of the things to be assumed in a demonstrative syllogism is "definition," therefore, definition must logically precede demonstration. David certainly has the above passage of the *Post. Anal.* in mind when he says: "definition precedes demonstration because, as Aristotle says, 'the starting point of demonstration is definition." 29

32. "*Shakk'* translates ἀπορία."objection," "puzzle," "question for discussion."

33. The word translated "unrestricted" is *mursal* which translates the Greek word ψιλός meaning "bare," "naked," "simple." In the light of author's discussion in paragraph 51

below, "unrestricted" seems to be a better translation. On the word *wahm* ("imagination") see Commentary, sec. 39, below.

34. By the "subject matter" the author means the starting points or principles (mabadi' = ἀρχαί; see paragraphs 85 & 146 of text) of scientific investigation. His reference to the *Post. Anal.* is, therefore, correct. 30 For in the first part of this work, Aristotle maintains that the ultimate starting points of demonstration are indemonstrable and must be assumed to exist if demonstration is to be at all possible. These include "axioms" and "theses" (*Post. Anal.* 72a 4-25). Both the existence and the meaning of unit must be assumed (λαμβάνεται = *yutasallam*)by the arithmetician, and spatial magnitude by the geometrician (*Ibid*., 76a 32-76b 11).

The author's statement that Porphyry omitted the discussion of the existence of species and genera "because they do not concern the logician" is probably correct for presumably Porphyry thought that the problem of universals is a metaphysical, and not a logical, problem. Is the problem of universals metaphysical or logical? (See Commentary, sec. 44. below.)

35. The word "*kalbi*" used by the author is a literal translation of κυνικός (Cynic), meaning, "of the dog," "belonging to dog." The followers of Anitisthenes were called Cynics from the gymnasium (κυνόσαργες)where he taught (*Diog. Laert*., 6:13).

Antisthenes was a contemporary of Plato. He is said to have rejected the Platonic Forms in a famous statement which runs, according to Ammonius, as follows: "Antisthenes said, therefore, that genera and species are in naked mental conceptions, saying, 'Horse I see, but horseness I do not see,' and again, 'Man I see, but manhood (or humanity) I do not see.'"31 To this statement Plato replied, according to Elias: "But, oh Antisthenes, you have the things by which the individual horse and the individual man are seen, but the things by which manhood and horsenesswhich are universalsare seen, you do not have. For you do not have understanding."32

Anthisthenes, who has been described as the "first philosopher of language,"33 seems to have been interested in words. He is said to have stated that "the beginning of education is the examination of names."34 Two of the books listed in his

name by *Diog. Laert*., VI, 17, are: (i) *On Education*, or *On Names*, in five books, (ii) *On the Use of Names: a controversial work*.

Ibn al-Tayyib says that Antisthenes rejected genera and species (i.e., universals) and maintained that "they are mere names." This statement certainly makes Antisthenes a nominalist. Zeller recognized this fact. [35] Antisthenes was probably the first nominalist in the history of logic. G.C. Field, however, denies that he was a nominalist.[36] But, according to Elias, p. 47, and David, p. 109, Antisthenes maintained that "there are no universals" (μὴ εἶναι τὰ καθόλου. οὐκέστι τὸ καθόλου).If this evidence is true, then Antisthenes was indeed a nominalist, since the nominalist rejects the reality of universals, admitting the reality of only individuals.

36. There is a close parallel between the first sentence of this paragraph and Elias' statement: "For the Stoics said that universals are bodies."[37] The Stoics believed that only concrete individuals exist in reality and that universals are our subjective thoughts.[38]

37. It must be noted that when the Alexandrian and the Arabic scholars speak of the universal form existing "before the many" (πρὸ τῶν πολλῶν = *qabl al-kathra*),they mean two things. Firstly, they mean that the universal form is prior in time to their many particular instances. Secondly, they mean that the universal form exists in the mind of God who is correctly identified with the Demiurge of the *Timaeus*.[39]Now, the Platonic Form certainly exists "before the many," but only in the first sense. That the Form is a thought of God was an idea that arose later in the Academy, and was not Plato's. There is a passage, *Republic*, 597c, in which Plato says that God made the Form of the Bed. This seems to be an exceptional statement, and it seems that Plato means his Form to be eternal and ungenerated. In the *Timaeus*, the Demiurge, which, to all intents and purposes, is identifiable with God, is not the maker of the Form (Idea). On the other hand, and more significantly, he looks on the Form as his model in fashioning the sensible world (*Tim*., 28a). It follows that the Form must be prior if it should serve as a model, and, hence, it must have

a higher order of reality than the Demiurge. In the *Phaedrus*, 247c the Forms inhabit a "place beyond heaven"; the gods inhabit heaven. For Plato the Ideas (Forms) and God are independent entities although both constitute the intelligible side of reality. [40]

The doctrine among the Arabic philosophers of the triple existence of universals is already found in Ammonius' commentary: "It has been said that: Genera are of a threefold nature: some are before the many, others are in the many, and others are after the many."[41] In Islamic philosophy itself this doctrine is often associated with the name of Avicenna, but the doctrine was held by at least two of his predecessors, al-Farabi and Yahya Ibn 'Adi. That al-Farabi held this doctrine is mentioned by Madkour.[42] Yahya Ibn 'Adi composed a work entitled "on the threefold existence, metaphysical, natural, and logical."[43] The three stages of the existence of the universal are described by Avicenna as (a) natural genus (*jins tabi'i*), (b) the intellectual or mental genus (*jins 'aqli*), and (c) the logical genus (*jins mantiqi)*.[44] It will be noticed that what Avicenna calls the "natural," Yahya Ibn 'Adi calls the "metaphysical" (or divine, *'ilahi*), and although the concept depicted by these two terms is the sameboth refer to the genus "before the many"it seems that Yahya's term is more appropriate particularly since the genus "before the many" dwells within the divine mind prior to its immanence or incarnation in physical existents.

Ibn al-Tayyib's view that "Plato meant by the Form the power of God" is also wrong. It is true that in the *Sophist*, 247e Plato describes the Idea (or Form) as possessing power (δύναμις).but he does not say that it is the power of God. To Plato "power" here means "what is real."[45] The identification of Plato's power-possessing Form with the power of God seems to originate from Philo of Alexandria.[46]

The author's description is a description of the Platonic Form as a pattern or model (παράδειγμα).

38. There is a parallel of this statement in Ammonius: "The name of the Peripatetics arose out of the following reason: it is said that Plato, the divine, used to lecture to his pupils while walking in the Academy in order to make the body fit by means

of physical exercises; (this he did) for the purpose of illuminating the soul."[47]

39. *Wahm*, the word translated "imagination," is, in a general way, a translation of the Greek word φαντασία (not in the Stoic sense of "presentation" or "sense-impression") but in the Aristotelian sense, i.e., as the process by which images arise for us.[48] In this text it is used to translate Porphyry's word ἐπίνοια, i.e., "thinking," "thought," or "the power of thought"; it is, of course, related to νοῦς, "mind," although "mind" is superior in the process of intellection. Although Aristotle says that imagination is different from thinking (*De Anima*, 427b 15), he says also that "thinking is . . . held to be in part imagination . . . (*Ibid*., 427b 27-28) and that the soul never thinks without an image (*Ibid*., 431a 17, 432a 8-9). More significantly, "the faculty of thinking thinks the forms in the images" (*Ibid*., 43 lb 2). It follows from these statements that while imagination (φαντασία) and thinking (τὸ νοητικόν, ἐπίνοια) are functionally different, they could be quite related one to the other. τὸ νοητικόν presupposes φαντασία (just as φαντασία presupposes αἴσθησις, sense-perception). With the relationship between thinking and imagining in mind then (i.e., as in Aristotle), we feel justified in translating the word, *Wahm*, used in this text to translate ἐπίνοια as "imagination." In other passages in this text *wahm* has been translated by "thought."

40. The author divides imagination in general (or what he calls "absolute imagination") into two, restricted and unrestricted. This division, however, is one that is, he says, accepted by many commentators (the views of Ammonius, etc., come later in this note). But he (the author) subdivides the unrestricted into real and unreal. The restricted (i.e., true) imagination has as its object a concretely existing sensible thing, e.g., the imagination of a horse. Thus, this kind of imagination presupposes sense-perception.

The real unrestricted imagination has as its object a universal form (or concept) which was originally derived from particular instances but which form, qua form (intelligible), does not concretely exist. For instance, I can imagine the form of Beauty just as I can imagine the form of horse. But unlike horse

which concretely exists, Beauty does not concretely exist: for absolute Beauty does not exist, he says. This is a rejection of the separate, self-existing Platonic Forms. The form of Beauty, for Ibn al-Tayyib, is a creation of the mind. The unreal unrestricted imagination is the imagination of such things as unicorn, griffin, etc., which do not exist at all.

While the distinction between restricted and unrestricted imagination is in Ammonius and the other Greek writers, that between real and unreal unrestricted imagination is not. Ammonius says: "Of existing things some have substantive existence, others such as horse, centaur and goat-stag exist in bare conception; these come into existence when they are thought and go out of existence when they are not thought, but their existence stops with the stoppage of thought (of them)." 49

The word "*anz-ayyil*" is a literal translation of the Greek noun τραγέλαφος ("goat-stag") found in Aristotle's *De Interp*., 16a 17. *Prior Anal*., 49a 24, *Post. Anal*., 92b 8, Ammonius, p. 39 (i.e., the preceding paragraph of this note) Elias, p. 47.

41. By "body" I take the author to mean not only the human body but also any natural or physical substance.

(i) Anaxagoras (d. 428 B.C.), a Presocratic natural philosopher, held the doctrine that a natural substance consists solely of parts which are similar (ὁμοιομερής).Aristotle refers to this doctrine of Anaxagoras in *De Caelo*, 302a 28-31. It is mentioned in *Diog. Laert*., 2, 3: 8.50

(ii) The atomism of Epicurus (and, indeed, of other Atomists) necessarily results in a belief in the indivisibility of the ultimate constituents of things. In *Diog. Laert*., 10, 41 Epicurus says: "Of bodies some are composite, others the elements of which these composite bodies are made. These elements are indivisible (ἄτομα) and unchangeable, and necessarily so, if things are not all to be destroyed and pass into nonexistence . . . It follows that the first beginnings must be indivisible, corporeal entities."

(iii) Empedocles is one of the "others" who, according to Aristotle (*De Caelo* 302a-b), held that bodily things are composed of the four elements (fire, water, earth, and air). Hippocrates believed that the human body is composed of four ele-

ments: blood (αἶμα).phlegm (φλέγμα), yellow and black bile (χολὴ ξανθὴ καὶ μέλαινα)[51] which themselves consist of the four elements of Empedocles. While Plato held that a body is composed of the four Empedoclean elements; he rejected the view that these elements are the ultimate, irreducible constituents of bodies: the elements are mere names of indeterminate "qualities" which are the fundamental and permanent background of bodies (*Timaeus* 49a - 50a).

42. (i) On the Pythagorean doctrine that the soul is composed of numbers, see note 21 above.

(ii) It is not clear what the author means by the "soul having a form with God." His statement could be taken to mean that the human soul is an image of the Form of the soul; in this case, the soul would be a created thing. It is not clear whether this Form of the soul which is "with God" is uncreated, eternal, and coeval with God, or is the "first" soul created by him to be the pattern of later souls. However, even if the author means to say that the soul, according to Plato, is both created and uncreateda bald contradictionhe still represents Plato's view faithfully. For in the *Timaeus* the soul is created (e.g., 34c), while in the *Phaedo*, 70 ff. and *Phaedrus*, 245c, and *Laws*, chapter 10, the soul is uncreated and is the first cause of all motion.

(iii) According to Heinze (Xenocrates frag. 60) Xenocrates, head of the Academy from 339-314 B.C. defined the soul as a self-moving number: ψυχή ἔστιν ἀριθμός ἑαυτὸν κινῶν .The commentators are unanimous in attributing this definition to Xenocrates, e.g., Plutarch,[52] Alexander Aphrodisias,[53] John Philoponus.[54] This definition is explained by Simplicius to mean that the soul is intermediate between the Forms (which are Numbers) and the sensible things. This is the definition of the soul according to Xenocrates.[55] However, long before Xenocrates, Pythagoras had also held that the soul is a self-moving number, according to Plutarch and Stobaeus.[56]

43. The author's argument here is that since two individuals may answer to a common name (i.e., of a species), and since two species may answer to a common name (i.e., of a genus),

therefore both species and genus exist. The nominalist would surely reject the conclusion of this argument as a non sequitur. The nominalist would say that only individuals really exist, and that it is due to the inadequacy of natural language that we write them under the same concept (species or genus) through which concept we think the many homogeneous individuals which it includes.

44. Porphyry, like others after him such as Ammonius (see footnote 57 below) and Ibn al-Tayyib (see para. 44) recognizes that the problem of universals is a metaphysical or, more precisely, an ontological, not a logical, problem.

Aristotle says that "Socrates . . . fixed thought for the first time on definitions" (*Met*., 987b 3-4). On the day Socrates stood in the market place in Athens and asked his interlocutor to define or tell him the meanings of "courage," "piety," "virtue," etc, and pursued his interlocutor with questions until the latter found himself in a logical maze and declared his inability to define the termon that day the discussion of the problem of universals had been broached. Plato regarded his separate, self-existent, and nonsensible Forms or Ideas (which were universals) as ontological entities. 57 His theory of Forms was many-pronged, but it can be said that one of the prongs was to deal at the problem of the meaning of a general term. In his view the term "large," for instance, took or received its meaning through "participating" (μετέχειν)in the Form of Largeness.

What gave rise to the problem of universals was the attempt, to solve the problem of the *meanings* of the general terms of language. Thus, it is also a problem in the philosophy of language. But insofar as meanings were thought to be entities either having objective existence independent of the mind or existing in the mind, the problem is primarily an ontological problem; and it is so considered also in modern philosophy. It is about what kinds of things there are, or whether meanings are among the things that are (exist).

45. The statement on these kinds of relations (σχέσεις = *nisab*)is in Ammonius: "You must know that relation is asserted either (i) in respect of an art, like the relation of the teacher to the pupil, or (ii) in respect of misfortune, like the

relation of the master to the slave, or (iii) in respect of choice, like the relation of a friend to a friend, or (iv) in respect of nature, like the relation of father to son." 58 The second, however, is different, for Ibn al-Tayyib's is "a relation in respect of force."

46. The logical genus is the third (and the last) stage of the triple stages of the existence of the genus (see Note 37 above). It is "the form arising in the soul" (i.e., in the intellect). Ammonius calls it "intellectual genus" (γένος ἐννοηματικόν).It is a concept or universal which exists in the mind as a readymade category for apprehending the data of sense-experience. As a genus, it embraces all its speciesthis is what the author means by "it is found in all of its species."

47. These are the five "Great Kinds" (μέγιστα γένη)of the *Sophist*, 251 ff: Existence, Sameness (*'ishtirak* = κοινωνία ,ταὐτον)Otherness (or Difference), Motion, and Rest. The author has, however, substituted Actuality and Potentiality for Motion and Rest respectively. This is curious. Plato, of course, does not identify Motion with Actuality, and Rest with Potentiality. Aristotle, however, in some passages (e.g., *Met.,* 1048b 18-35, 1065b 6-7) identifies Actuality (ἐνέργεια)with Motion (κίνησις).. In 1065b 6-7 he says: "There being a distinction in each class of things between the potential and the completely real, *I call the actuality of the potential as such movement*." He modifies this view in the *Physics*, 201b 30: "Motion seems to be a kind of Actuality, but imperfect." (Also 257b 7)

Elias, however, thinks that Plato identifies Motion with Actuality,59 though not Rest with Potentiality. Elias may have been the source of Ibn al-Tayyib's identification of Potentiality with Rest. It is possible for Ibn al-Tayyib to have reasoned thus: Actuality and Potentiality are opposite concepts; Motion and Rest are also opposite concepts; Motion is equal to Actuality; therefore, Rest is equal to Potentiality.

48. The Arabic expression *wujida* plus "*li*" translates the Greek ὑπάρχειν plus the dative case. In the *Prior Analytics* Aristotle uses this expression to mean "to be predicated of." Sometimes when Aristotle wanted to say A is B, i.e., B is predicated (κατηγορεῖται)of A, he would say B belongs to (or is attached to, or is applied to) A.

49. This is, no doubt, a reference to Aristotle's Unmoved Mover of the *Physics*, Book 8, chapters 5 and 6, and the pure Intelligence of *Met*., Book 12, chapters 6-8. "There must be such a principle, whose very essence is actuality" (1071b 19-20). (Plato's Forms, which are eternal and ungenerated, must naturally exist in Actuality; it is the sensible world, to be constructed on the pattern of the Forms, which exists in Potentiality.) That Potentiality is related to matter, Aristotle says in *De Anima*, 412a 10, 414a 16.

50. The three genera of the grammarians are mentioned in Elias, Pseudo-Elias, and in David.[60] David, however, adds that Porphyry omitted to mention them because these are not strictly (κυρίως) genera.

51. That genus is analogous to matter Aristotle says in *Met*., 1024b 8-9 and 1038a 5-6. That matter is the underlying principle of all natural existents is also an Aristotelian doctrine. "For what I mean by matter is precisely the ultimate underlying subject, common to all things of nature, presupposed as their substantive, not incidental, constituent" (*Phy*., 192a 32-33; also *Met*., 1-32a 17, 1033a 24 - 1034a 8). By "matter receiving mathematical forms" Ibn al-Tayyib must mean the "intelligible matter" which Aristotle says is the object of mathematics (see Commentary, sec. 114, below).

52. Porphyry uses the word ἔοικε ,"it appears."

53. In the Porphyry section of this paragraph, *'ala al-'itlaq* translates the Greek ἁπλῶς= *simpliciter*: simply, absolutely. Elias (p. 53) mentions the fact that the word "absolutely" is used in three senses: τὸ ἁπλῶς τρία σημαίνει. These three are: (a) τὸ μοναχῶς= *bi-ma'na al-juz'i*: in the sense of particularity. (b) τὸ καθόλου= *bi-ma'na alkulli*: in the sense of universality. (c) τὸ κυρίως = *bima'n 'ala al-tahqiq*: in the sense of preciseness or strictness.

54. "Addition" translates the Arabic word *Istithna'* which was used in the Arabic translation of the *De Interpretatione* to translate the Greek πρόσθεσις(16a 15, 16a 19, 17a 12). In the logic of propositions the word means "additional assumption," i.e., the minor premise of the conditional syllogism.[61]

55. No such statement is made in the *Phaedo*.

56. The basis of this view (paragraphs 84 and 85) is the *Post*.

Anal., 92b 4-18 where Aristotle says that the existence of something (to be investigated) must be assumed if an investigation into its meaning is to be possible (see also Commentary, sec. 34, above) and that the knowledge of the essence of something presupposes the knowledge of the existence of that thing. "For this reason," Ibn al-Tayyib says, "Porphyry omitted the investigation of the existence of genus and concerned himself with the investigation of its essence." Aristotle says, in the above-quoted passage, that it is the task of definition to show what a thing is, and it is the task of demonstration to show that a thing exists.

57. This is a reference to Fol. 5a (not part of this published text) where the author discusses definition and description. He says: "We say that the definition is perfect when it corresponds to that which is defined, without excess or defect; and so also is the description. The difference between the definition and the description is that the definition is made up of the things through which is fixed the essence of the thing, as we say that man is animate, rational and mortal; and the description is made up of the propria and the accidents of the thing, as we say that man is an animal who laughs, sails a boat and is broad-nailed. Both share the use of the genus of the thing, and differ in that the definition adds to the genus substantial differentiae, while the description adds accidental differentiae." 62

58. Porphyry is aware that his explanation of the genus, (see paragraph 91) which is Aristotle's (*Top*., 102a 31-33), is, strictly speaking, a description (ὑπογραφή)and not a definition. He does not differentiate between description and definition (ὁρισμός).The Greek commentators, as well as the Arabic, however, deem it necessary to make such a distinction. The general argument is that since definition is composed of the genus and the specific differentia, and since there is no genus transcendent (ὑπεραναβεβηκός:Elias, p. 56; David, p. 131) over the genus, i.e., since there is no absolute genus beyond the summum genus, therefore, there can be no definition of the genus, but only a description. That there would be a circularity or infinite regress were the genus definable, is pointed out by the author in paragraph 89. However, the author is wrong when he says (paragraph 89) that "the species also has a description, not a definition," for, surely, the species can be defined per genus et differentiam.

59. That knowledge is of the universal form is as Platonicthe universal Form (or Idea) is the object of knowledge whereas the fleeting individual is the object of belief and opinion (δόξα)as it is Aristotelian (e.g., *Met*., 1003a 14, 1060b 19-23).

60. We will discuss the subject matter of this paragraph in conjunction with those of paragraphs 92 and 95 below; the issue involved in all of them is the same: predication.

The predicate is that which is asserted about a subject; to make an assertion about a subject is to make a judgment about that subject. Judgment is a mental act, and the relation of the form (or image) in the mind to the form as it is in reality is the condition of the truth of the judgment. That is to say, the judgment represented by the image is the criterion for the truth or falsity of that image.

The author's statement that the things predicated are concepts or universals, i.e., the "forms existing in the soul," is a doctrine in modern logic; so is his statement that "the things of which they are predicated are the individuals." Ibn al-Tayyib aptly observes (at the end of paragraph 91) that "the genuine predication must make reference to individuals." Individuals are, for him, paradigm cases of logical subjects (see also paragraphs 172 and 174).

The author's emphasis (paragraph 92) on the point that the individual cannot be a predicate is a canon in modern logic. Thus, Strawson says: "Particulars can never be simply predicated, though they can have things predicated of them (i.e., be subjects) and can be parts of what is predicated." [63] However, the author (i.e., Ibn al-Tayyib) is wrong in modifying his view (paragraph 95) by saying that when we say that the individual is a predicate we mean that "his name is predicated of him." A name, as Geach points out, can be a logical subject, but it cannot be a logical predicate; for "a name has a complete sense, and can stand by itself; a predicate is what is left of a sentence when the subject is removed . . ."[64] In a sentence like "This is Zaid" the proper noun, Zaid, is not a logical predicate attached to the subject "this." Once we remember that a predicate is that which is asserted about a subject, it becomes clear that the name, Zaid, is not a predicate asserted of "this" which is not a name or an object. Thus, a name (e.g., Zaid) cannot, *simpliciter*, be used predicatively.

It seems paradoxical that while Porphyry has been condemned by historians of logic for making species a predicable (see note 1), he has not been criticized for making the individual a predicate. When Porphyry says: "Of predicates *some* (τὰ μὲν) are predicated of one thing only, like Socrates . . . and others (τὰ δὲ) are predicated of many different things like genera . . .," he has surely made the individual a predicate, contrary to Aristotle's position in the *Categories* that the individual (i.e., the primary substance) is never a predicate. Perhaps the fact that "individual (ἄτομος) was not listed with the "five words" (the *quinque voces*) is what has led others into overlooking the fact that it has been made a predicate. 65 The four extant Greek commentaries we have been studying along with Ibn al-Tayyib's (i.e., those of Ammonius, Elias, Pseudo-Elias, and David) admit that the individual can be a predicate.

Moody says that the individual as a sixth predicate appears in Avicenna.66 This is not correct. Avicenna in his "*Eisagoge*" (al-Madkhal)accepts the five predicables. In Islamic philosophy, al-Farabi was one of those who made the individual a predicate. In his book on the *Analytics*67 after stating that predicates of premises are universals he adds that predicates may also be individuals, like the statement: "This (man) sitting is Zaid." The *Ikhwan al-Safa*' also made the individual a predicate. They defined the individual as "an existent which is separate from the others and can be perceived by one of the senses, as when you say "this man," "this horse," "this goat" . . .68 They (correctly) attributed these words to the *Eisagoge (Ibid*., p. 355). Also, in the famous encyclopedia of al-Khwarizmi called *Mafatih al'ulum* ("Keys to the Sciences") the author lists "individual" (*shakhs*), e.g., "this horse," together with the *quinque voces* of Porphyry.69 These are some of the the sources in Islamic logic where "individual" is explicitly stated to be a predicate or is listed along with the *quinque voces*.

61. The last part of this paragraph beginning with "The reason for his use . . ." is not clear. His use of "matter" (*madda*) here is inexplicable. It seems he uses "state" (*hal*)as a synonym of *malaka* (=ἕξις),a permanent condition, as opposed to *tahayyu'* (=διάθεσις),a disposition, inclination.

62. Three of the six senses of the "indivisible" (ἄτομον,i.e., the individual) are mentioned by David. They are *a, b*,

and *e*. David says: "The individual is used in many senses. (a) Thus, the individual is that which is indivisible such as moment and point (unit) . . . (b) The individual is that which is hard to divide such as the hardest metal and such things (ἀδάμας = *hajar sawwan*). (c) Socrates or Alcibiades is an individual not because he is by nature "uncuttable" (for he is "cut" into body and soul), but that after the cut his appropriate form does not survive." 70 *c* is almost similar to the author's *e*.

63. Avicenna thinks differently on this point. He says: "The definition of the genus would be complete even if we do not take the species in it insofar as it is a related term but insofar as it is the thing itself. For if you mean by species essence, nature and formfor this is what is generally meant in the customary definition of the (ancient) philosophers then species is not related (or added) to genus. And if you mean by "differing in species" differing in essence and form, the definition of genus becomes complete. For, if you say, the genus is that which is predicated of many differing in natures, essences, and essential forms in answer to what a thing is, the definition of genus becomes complete, and you do not need to take species as a related term and, thus, bring it in its (genus') definition."71 (See Commentary, sec. 67, below.)

64. When the author says that in Greek the same word is used for "species" and "form" he certainly has the word εἶδος in mind. This is true of both Aristotelian and Platonic philosophical Greek, although Plato sometimes uses εἶδος to mean "genus," e.g., *Theaet*., 178a, 181c, *Phaedrus*, 263b, *Statesman*. 263b, and γένος to mean "Form," e.g., *Sophist*, 253b-c. It must be noted that for "form," and particularly for the "outward or physical form," the words μορφή and σχῆμαare also used. It seems μορφή that or σχῆμα is what the author means by "the apparent form of each individual."

As regards the word of "matter" and "genus" the author is wrong in saying that there is one Greek word used for both. The usual word used by Aristotle for matter is ὕλη (Arabic: *hayula*), and for genus is γένος.Whereas does mean both form and species, γένος does not mean both matter and genus, nor does ὕλη mean both genus and

matter. Aristotle's identification of matter and genus (see note 51 above) is not made from the linguistic or verbal point of view but from the point of view of the conceptual signification of one or the other term (i.e., genus, or matter).

65. This statement of Euripides is in the *Aeolus* [72]and not in the *Phoinissae* as David (p. 143) says.

66. That the phrase "*burhan al-daur*" means circular demonstration (*petitio principii*) is obvious from the reasoning that follows.

67. "Demonstration of the unknown by the unknown": τὸ ἀγνοούμενον διὰ τοῦ ἀγνοουμένου δηλοῦν.(David p. 132).

The author's argument here is a repetition of the same argument on Fol. 4b except that there he writes Alexandria in place of Constantinople. Simply put, his argument is that terms should be defined by other terms admitted to be already known. In other words, it is wrong to define unknown terms by terms which are themselves also unknown. This is certainly a problem in definition which was discussed also by the Alexandrians.

Elias, for instance, says that "never in giving a definition should we use an interchangeable demonstration . . . For, as it has been said, the philosophers were not accustomed to using an interchangeable (or circular) demonstration in definition."[73] Pseudo-Elias also, after restating Porphyry's descriptions of the genus and the speciesin which descriptions he uses both terms, says: "This is an interchangeable (or circular) demonstration, but an interchangeable demonstration was discredited among the philosophers." But then he agrees that "genus and species are related (terms); related (terms) are comprehended and demonstrated through one another."[74]

In his solution of the problem (paragraph 109), Ibn al-Tayyib does what Pseudo-Elias did, that is, he admits that if A and B are related terms, A must be defined in terms of B and vice versa. This is not satisfactory. In Aristotle matter and form are related terms, but Aristotle's definition of matter that "what I mean by matter is precisely the ultimate underlying subject, common to all things of nature, presupposed as their substantive, not incidental, constituent" (*Phy.*, 192a 32-33) is made without any reference to form which can thus be de-

fined with reference to matter, the definition of which is already known. In the *Top*., 141 26-30 Aristotle points out that the terms of a definition should be prior and well known.

Avicenna is also aware of the difficulties involved in the definition of the unknown by the unknown. He says, "The definition of the unknown by the unknown is neither a definition nor a demonstration, whereas every definition or description is a demonstration." 75

68. The author has just said (in paragraph 111, repeated in paragraph 132 below) that the species has three relations; now he says it has two. It seems, however, that the two relations a and *b* (of paragraph 111) are the same and can be reduced to one.

69. The Arabic word *qaul* translates the Greek λόγος, a word used in many senses. Here *qaul* as λόγος (also used by Porphyry) is used to mean definition (*hadd* = ὁρισμός).

70. This is what Porphyry says in paragraphs 135 and 136 (below), but it is not true of all the categories, although each category is a summum genus. For what are the species of the category "time" (e.g., "yesterday"), "place" (e.g., "in the Lyceum"), etc.? And what are the essential differentiae which would divide these categories into the subaltern genera and the infimae species?

71. Aristotle talks at great length about sex organs in reproduction in the *De Gen. Anim*., 716a ff. David, speaking about the kinds of division (see note 80 below) says that one kind is the division of substance into accidents, like male and female (for these do not differ in terms of substance but of accidents, I mean, in terms of their prominent parts (or genitals). For thus Galen says that female does not differ from male except in terms of their parts (or genitals).76 Galen's own words are: "Therefore, all the parts that belong to the male can also be found in the female, there being only one difference between themthe whole of which we must mention, namely, that the parts of the female are internal, while those of the male are external."77 *Dakhil* and *kharij* used by Ibn al-Tayyib translate Galen's ἔνδον ("internal") and ἔξω ("external") respectively.

72. The word translated "privation" is *salb* which ordi-

narily means "negation" (also *nafy* = ἀπόφασις).It is used here in the sense of στέρησις which, in Aristotelian terminology, is used for relative not-being. The word "privation" used here to translate *salb* is suggested not only by the fact that the verb *salaba* means also to "plunder," "rob," "pillage," etc., but also by the subject matter under discussion: negation. If you say "B is not A" it means that B is "other than" (or "different from") A, i.e., B is "deprived" of the characterization of A. This question of negation which involves the verb "to be" was first solved, as we know, by Plato in the *Sophist*. And Aristotle also says: "Privation is the denial of a predicate to a determinate genus" (*Met*., 1011b 17; see also 1022b 22; 1055b 4-17). Thus "not-body" means other than, or different from, body.

73. The doctrines that a thing cannot possess contrary characters in actuality, but only in potentiality, and that what exists in actuality existed before in potentiality are Aristotelian: "For the same thing can be potentially at the same time two contraries, but it cannot actually" (*Met*., 1009a 35-36). "For coming-to-be necessarily implies the preexistence of something which potentially "is" but actually "is not'. . ." (*De Gen. et Corr*., 317b 17 ff; also *Met*. Book 9, chapter 7).

74. The author's argument seems to be this: of animate (or soul-possessing) things some are angels which are not bodies and some are animals, plants, etc., which are bodies. Thus, animate is a higher generic concept than body. Avicenna also criticizes the Tree of Porphyry, saying, "As to the division you have brought in respect of substance and have ended with man, it is not correct, although it is not useless for understanding the intended goal. For, if animate body includes plants and animals, it does not include the angels except by participating in a name (i.e., except insofar as "body" is an equivocal name); thus animate body is not a genus in which angel is included . . ." 78 Avicenna continues to say that if Porphyry makes rational animal a genus he excludes the angels, and that rational which includes both man and angels must be a higher generic concept than rational animal (which does not include the angels).

75. There is no such division in Plato, although Plato makes a brief mention of plants in the *Timaeus*, 76e-77e.

76. The word "also" does not occur in the original Greek text. The author is right in saying that there is no need for it. Hence, I have bracketed the word in the passage of Porphyry.

77. "Becoming like the divine as far as we can"; Plato's *Theaetetus*, 176b.

78. See Commentary, sec. 34, above.

79. This sentence means that Existence which is neither a nature nor a genus pervades all existing things. In other words, Existence does not function as a category, or a conceptual pigeonhole, for existing things.

80. The eight types of division are set down in Fol. 10b. They are: (1) division of the genus into species; (2) division of the species into the individuals; (3) division of the whole into similar parts; (4) division of the whole into dissimilar parts; (5) division of substance into accidents; (6) division of the accident into substances; (7) division of the accident into extrinsic accidents; (8) division of the equivocal name into its various meanings. The author repeats them in paragraphs 153 and 154.

> Four of these eight (numbers 1, 3, 4, and 8) are listed in Ammonius. [79] Elias[80] lists seven of them (namely numbers 1, 2, 3, 4, 5, 6, and 8). All the eight exist in Pseudo-Elias.[81] These kinds of division, however, occur in earlier philosophical literature. With the exception of numbers 2 and 7 the rest are mentioned in the *Didaskalikos* of Albinus (2nd c. A.D.).[82] Of these kinds of division the most valuable one, from the point of view of logic, is the first one: division of genus into its species.

81. The expression *al-sam' al-kiyani* (or *sam' al-kiyan*) is used to refer to Aristotle's *Physics* (see Goichon, *Lexique*, p. 357).

82. Although in the metaphysics of Aristotle the composite thing (i.e., substance) consists of both form and matter, yet it is form that gives character and determination to the thing. Hence, οὐσία(substance) is identified with εἶδος (form) in the *Metaphysics* (see Ref. to Commentary, sec. 1). Since matter is not capable of separate existence and is characterless, this composite thing, qua composite, disappears when denuded of its form (see. e.g., *Met*. 7, chapter 3).

83. There is no such statement made by Aristotle in the *Categories* itself, but what the author is saying here is obvious from the method of division (*al-qisma*, διαίρεσις).

84. "*Bab*" literally means "door," "gate," "gateway." Metaphorically used here, it means "condition," "cause," "determinant."

85. Let us state the author's arguments that Existence is not a genus (paragraphs 148-152).

The first argument (paragraph 148) is not so clear. However I think the import of the argument is this, that substance and accident cannot be species of Existence and that since, in consequence, Existence has no species (or at any rate not more than one species), therefore it cannot be a genus. That substance and accident are not species of Existence is due to the fact that man, for instance, participates in both substance and accident, but this would not be so if they were separate species. (This argument resembles Aristotle's in *Top*., 123a 30-33 that a genus cannot exist of one species "since of every genus there are always several species.")

His second argument (paragraph 149) is that if Existence were a genus it would follow necessarily that it possesses, i.e., in potentiality, some differentiae which would divide it into species, but Existence possesses no differentiae (or at least its differentiae are unknown); therefore, Existence is not a genus. In other words Existence cannot function as the genus animal which possesses the differentiae of mortal, rational, etc.

The third argument (paragraph 150) is that assuming that substance and accident are species of Existence, they are on different levels of reality. In other words, they do not *equally* participate in their genus in the way horse and man equally participate in their genus animal. So, Existence is not a genus.

The implication of the fourth argument (paragraph 151) is that the species ass will still exist if the species man is destroyed. But if Existence were a genus for both of them, then you would expect the disappearance of one to follow the disappearance of the other.

The fifth argument is of no philosophical interest.

86. Stephanus (of Alexandria) in his commentary on the *De Interpretatione* says, "For thus Porphyry also in the *Eisagoge*

says that "being" (or existence) is predicated homonymously, although it has been shown that "being" is not predicated homonymouslysince there is in it *priority* and *posteriority*but ambiguously." 83 (Ambiguously = τὰ ἀφ' ἑνός,see note 87 below). This view that in terms which have many meanings there is a distinction of priority (τὸ πρότερον)and posteriority (τὸ ὕστερον)occurs earlier in Alexander.84 The source of this is Aristotle. In *Met*., 1030a 21-23 he says, "For as 'is' belongs to all things, not however in the same sense, but to one sort of thing primarily (πρώτως = πρότερον)and to others in a secondary way (ἑπομένως= ὕστερον) . . ." (See also 1028a 14).

The view occurs also in Arabic philosophy: Being, to al-Farabi, is an ambiguous term (*al-ism al-mushakkik*) applicable priorily to substance and posteriorily to accident.85 This is what Ibn al-Tayyib is saying in paragraph 154. Avicenna says: "That (term) whose meaning is one, but yet differs, for instance Existence (or Being). For it is one in many things, but it differs, for it is not in them in one and the same manner in all respects. It belongs to some as 'prior' (*qabl*) and others as 'posterior' (*ba'd*). For Existence belongs to substance before belonging to the other things which follow it (i.e., substance). Moreover, Existence belongs to some substances before it belongs to other substances. Similarly it belongs to some accidents before it belongs to other accidents. Now, this is the way of priority (*al-taqaddum* = τὸ πρότερον)and posteriority (*al-ta'akhkhur* = τὸ ὕστερον)."86

This bifurcation of being (or beings) into substance and accidents, or what is prior and what is posterior, originates from Aristotle's distinction (in the *Categories* and the *Metaphysics*) between the primary (and self-existing) substance and the other (nine) accidental categories (which cannot exist independently, 1028a 33-34). In 1017a 7 he says, "Being is said of the accidental (κατὰ συμβεβηκός) and the essential" (or the absolute, καθ' αὑτό).See also 1030a 21-22 quoted earlier in this note).

87. The works of Yahya Ibn 'Adi and Abu Matta Ibn Yunus are not extant and, thus there is no knowing what they actually said. Elias says, "Existence is divided not as a homonymous

term (as in the *Categories* of Aristotle and as Porphyry has just said) nor as a genus (is divided) into species (as Plato said), *but as an ambiguous term*. 87 The phrase translated "ambiguous" is τὰ ἀφ' ἑνός καὶ πρὸς ἕν ,it literally means "proceeding from one source and leading to one end." (The source of this expression is to be found in Aristotle (*Met*., 1003a 33, 1061a 11, *Eth. Nich*., 1096b 27). In Met. 1003a 33, he says, "The term 'being' has many meanings, but they are all with reference to one principle (or starting point)." (See how this view is expressed by Ibn al-Tayyib in the latter half of paragraph 156; see Commentary, sec. 90, below.)

Terms which are ambiguous are intermediate between synonymous (univocal) and homonymous (equivocal) terms of the *Categories*, la 1-15. Thus Elias says (p. 71) that "these (ambiguous) terms are between (μέσα)homonymous terms and genera." (μέσος translates *mutawassit* used by Ibn al-Tayyib).88 Alexander before him had also said that the term "being" is between (μεταξῦ)equivocal and univocal.89 To say that Existence (or Being) is an "intermediate" or ambiguous term means that Existence does not have the same meaning, but that all things that "are" stand in some relation to οὐσία(substance) which is the primary ὄν .After examining whether "being" falls into any of the different kinds of division, Pseudo-Elias also says, "Therefore, it remains that being is divided as an ambiguous term. For just as from medicine we say a medical book and a medical knife, so from 'being' (we say) substance, quantity, quality, and the remaining genera (categories)."90

As regards the five names or terms the author mentions in this paragraph, they are reducible to three, for equivocal and dissimilar are the same, and so are univocal and synonymous. In fact, Ibn al-Tayyib becomes aware of this, for in his Commentary on the *Categories* he says, as he gives reasons why some scholars think that the *Categories* is not the work of Aristotle, "For he (Aristotle) divides terms into equivocal, univocal, and paronymous (derivative), while in the *Rhetoric* he divides them into five: equivocal, univocal, paronymous (derivative), dissimilar, and synonymous. We, however, state this argument by saying that by referring to equivocal and

univocal, he had already referred to dissimilar and synonymous, because these two terms (dissimilar and synonymous) are contraries (respectively) of the other two (univocal and equivocal), and the contrary is understood through its contrary." 91 There is no passage in the *Rhetoric* where Aristotle divides terms into five as Ibn al-Tayyib says. *Mutaradif* (*or muradif*) does not mean synonymous in the logical sense of synonymous as in Aristotle's *Categories*. It is synonymous in the lexical sense, i.e., of referring to words which are different in form but which have the same reference; for instance, *asad* and *laith* are synonyms in Arabic: they have different forms but the same reference, i.e., "lion."92

88. The expressions "increase" and "decrease" (*ziyada* and *nuqsan*) reflect the Greek τὸ μᾶλλον καὶ τὸ ἧττον.for instance, in *Cat*., 10b 26 where Aristotle says "one thing is said to be more or less white than another." What this means is that the term "white" is applicable to many different things, some of which are whiter than others. For instance, snow, this paper I am writing on, and the wall of this room are white, but snow is whiter than the other two. They are all "agreeable" in the meaning of 'white' except that they differ through increase or decrease."

89. The author's statement here implies that Plato thinks that Existence is a genus; in fact he explicitly says so at the end of paragraph 166 below. Aristotle (*Met*., 996a 6, 998b 10) thinks that Plato treats Existence as a genus. Plotinus (*Enneads* VI. 2.7), Elias (p. 70), and David (p. 158) also think that Plato makes Existence a genus. Stenzel,93 Tricot,94 and Elders,95 among the moderns, have the same view. If by genus these writers mean a transcendental or highest genus, then they are correct, for Existence is one of the five Great (or transcendental) kinds, μέγιστα γένη.of the *Sophist*, 253 ff, *Parmenides*. 136 ff, and *Theaetetus*, 185-6. But if by genus they mean genus in the sense that an Aristotelian category is, then they are wrong, for, for Plato (as for Aristotle), Existence can be predicated of everything, and is not a category. As one of the five "Great Kinds," it is an ubiquitous or syncategorematic concept which, like the vowel of the alphabets, pervades and combines with all the letters (*Sophist*,

253a). In the *Parmenides* (to which Elias refers) 144b Plato says, ". . . indeed it is nonsense to suggest that anything that *is* should lack Existence. Thus Existence is parcelled out among existents of every possible order from smallest to greatest." Plato does not think that Existence is a genus which, like art, can lend itself to the method of division (διαίρεσις).He nowhere makes mention of the species of Existence, and since a genus cannot exist of only one species, as Aristotle points out in the *Topics*, 123a 30-33, it follows that for Plato Existence is not a genus (for a genus must have more than one species). Hence Plato does not treat Existence as a genus in the sense that an Aristotelian category is.

90. In *Met*., 998b 22, which is "in the third book of the *Metaphysics*", Aristotle says, "But it is not possible that either unity or Existence should be a single genus of things." That Existence is not a genus is repeated in *Anal. Post*., 92b 14 (οὐ γὰρ γένος τὸ ὄν)and *Soph. Elenchi*, 172a 12. The author's statement, "But it (Existence) is one of the equivocal names . . . which proceed from one agent and desire one goal," seems to translate Elias' phrase, τὰ ἀφ' ἑνός καιπρὸς ἕν(see Commentary, sec. 87, above).

91. *Al-qasd'* "Intention," here, has the sense of reason: *ratio*. 96

92. The word translated "urges" is not, strictly speaking, the Arabic word *ya'muru* which is used, but wrongly, to translate Porphyry's παρακελύομαι :to urge, exhort, recommend. The Arabic word means: to order, command.

93. See Commentary, sec. 96, below.

94. Division is certainly a valuable method in logic. It is true that Aristotle criticizes this method of Division in *Anal. Prior*., Book 1, chapter 31, and *Anal. Post*., Book 2, chapter 5, yet he acknowledges (*Anal. Post*., 2, 13 and 14) its proper use, and his own system of definition per genus et differentiam takes its rise from the Platonic method of Division. It is the transcendental nature of the Platonic Form (as genus) which is the main ground of Aristotle's attack on the Platonic method of Division, for the transcendental genus, separated from its species and differentiae, does not lend itself to analysis into species and differentiae, (*Topics*, 143b 11-32, *Met*., 7, 12).

95. Aristotle does say that the infinite exists only in potentiality, and not in actuality (*Physics*, 204a 20, 206a 8-b32, 207b 14; *Met*., 994b 22, 1066b 11).

96. While the author's view of the Platonic laws of Division (paragraphs 161-163) is correct, all his references to the dialogues of Plato are wrong. Plato's method of Division is illustrated in the *Sophist*, 218e ff; *Statesman*, 258e ff; *Phaedrus*, 265 ff; and the *Philebus* 16c ff. These laws are summed up in the *Philebus*, 16c-17a. The "first law" is mentioned in, for instance, *Phaedrus*, 165d, *Statesman*, 263c ("horned" versus "hornless herds") and 266e ("winged" versus "wingless"); the third in, for instance, *Statesman*, 265a; and the fourth in, for instance, *Phaedrus*, 277b ("until the indivisible, i.e., the infima species, is reached": μέχρι τοῦ ἀτμήτου). The second law indicates that the Division must be dichotomous (*Statesman*, 287c) and that the coordinate species of the genus must exclude each other. The Division must be exhaustive (*Statesman*, 261b-c); the genus must be used up in all its articulations (κατ' ἄρθρα διατέμνειν, *Phaedrus*, 265e; the fact that Plato uses the verb διατέμνειν, to cut through, to cut to the uttermost, and not just τέμνειν, to cut, is instructive). A substantial differentia provides a basis of distinction or division. This basis or principle of division which is a character within the genus by which the species are distinguished is called the *fundamentum divisionis* (*Statesman*, 285b). The author has, however, forgotten that, according to the *Phaedrus*, 265d, Division is to be preceded by Collection (συναγωγή) which is the method by which "we gather a widely scattered terms into a single form" (i.e., a genus).

If we compare the author's statement in paragraph 163 that "nobody should stretch his foot to a level higher than himself," with Elias': "It is not necessary to go beyond bounds (lit. to stretch one's foot above) and to go from the supreme genus to the infimae species, while passing over the intermediates," 97 we find that although the two statements are, of course, different, Elias' vocabulary may have been the source of Ibn al-Tayyib's: "ya*muddu rijlahu 'ila darajatin arfa'a wa a'la minhu*" translates ὑπερβάθμιον πόδα τείνειν; (both verbs, τείνειν and *madda* mean: to stretch); similarly

tajawaza translates ὑπερβαίνειν , to go beyond, overstep.

97. Elias also says that since division makes the single many, while definition makes the many one (for instance, man is single but we take animal, rationality and mortalitywhich three concepts are pluralto define him), therefore definition and division are opposites (τὰ ἐναντιά).98 There is an opposition if we take definition to mean the "collection of many into one." In this case, "definition" should strictly be called Collection or Classification (συναγωγή),which is the opposite of Division. But definition (ὁρισμός), obtained through genus and differentia, is never the opposite of division. On the contrary, the purpose of the logical method of division is to define terms or species within a genus; the elements of the definition, namely genus and differentiae, are made possible through the method of division.

98. In *Anal. Post*., 83a, 36b 17 Aristotle says that genuine or proper predication is nonreciprocating, for it is not possible for A to be a quality of B and B to be a quality of A. However, in 36b 18-19 he admits that the predication of the definition is reciprocal. He admits in the *Topics*, 102a 19 that the proprium is also predicated convertibly (ἀντικατηγορεῖται) with its subject.

99. The author means that the "forms in the soul" (i.e., concepts) whose prior existence is in real things must not be likened to the goat-stag which does not exist in the real world.

100. The grouping of predicates into two kinds is strange, for all the six predicates he mentions (i.e., *a* and *b*) are general terms which are the "forms existing in the soul" and are, as such, the things predicated (see paragraph 92, and Commentary, sec. 60). Predicates can be grouped into (a) essential and nonessential, and (b) convertible and nonconvertible.

101. *Al-musha' ilaihi* seems to translate Aristotle's τόδε τί used in the *Metaphysics* to denote the individual (i.e., the primary substance). The Arabic expression literally means "that which can be pointed at."

102. Species proceeds not from differentia alone, but from the combination of both (see e.g., *Topics*, 143b 8-9, *De Part. Anim*., 624a 24). The author is aware of this, (See paragraph 191 and the latter part of 225 below).

103. "Intermediate" here has nothing to do with its other meaning of a subaltern (genus) in logical division. It means, here, that the differentia comes between the genus and the species, or that it is posterior to the genus but prior to the species. Elias says, "For the differentia is intermediate between them (genus and species), since it divides the genus on the one hand, and completes the species on the other." 99 μέσος ('intermediate') translates *mutawassit*.

104. This is because matter, as Aristotle points out (e.g., *Met*., 1029a 20), is indeterminate; it is a "such," not a "this," whereas form is determinate and a "this," and is that which gives character to matter.

105. In division and definition we do indeed make use of differentiae but not in analysis and demonstration (i.e., syllogism).

106. Lit. "It does not admit of increase or decrease, or a more and a less." The expression translates Aristotle's (οὐκ ἐπιδέχεσθαι τὸ μᾶλλον καὶ τὸ ἧττον), e.g., *Cat*., 3b 34.

107. After going through passages in Galen's *Opera* where the word "Nature" occurs, the one passage that comes closest to Ibn al-Tayyib's reference in this paragraph is a passage which reads as follows: "Nature signifies the primary substance which underlies all productive and corruptible bodies; wherefore some of the ancient philosophers were called, derivatively, 'natural.'"100 However, we have the following from A.J. Brock: "By using this term (i.e., 'Nature') Galen meant simply that when we deal with a living thing, we are dealing primarily with a unity, which, qua living, is not further divisible; all its parts can only be understood and dealt with as being in relation to this principle of unity . . . Galen expressed this idea of unity of the organism by saying that it was governed by a *Phusis* or Nature (ἡ φύσις ἥπερ διοικεῖ τὸ ζῷον)."101

108. Pseudo-Elias says, "The differentia in common is that by which something differs from another, such as he who is sitting is different from him who is standing, or he who is working from him who has stopped (working), or he who is asleep from him who is awake. Not only (is he different) by these, but also (he is different) from himself being a boy, for at some

time he becomes a man or grows old." 102

109. The use of the word *madda* (pl. *mawadd*) here is quite unusual. It is a synonym of *hayula* (ὕλη) which means prime matter. But the word, as used here, seems to be equivalent to *maudu'* which translates the Aristotelian ὑποκείμενον in its metaphysical sense, i.e., as the substratum in which something inheres (see Commentary, sec. 8, above). On this showing, the substrata are the species which are defined by the constitutive differentiae. It has already been shown (note 1) that it is in the species (and not in the genera) that the differentiae exist in actuality, that is to say, the actual subjects of inherence of the differentiae are the species. Avicenna, in fact, defines *madda* as "a synonym of matter (*hayula*); and it (*madda*) is said of every *subject (maudu'*) which receives perfection by its being joined to something else."103

110. In the *Anal. Post.*, 84a 12-14 Aristotle says: "There are two senses in which attributes may be essential: (a) because they inhere in the essence (or definition) of their subjects; or (b) because their subjects inhere in their essence (definition)." (See also *Met.*, Book 7, chapter 5). Ibn al-Tayyib's *a* and *b* correspond to Aristotle's. Aristotle gives as an example of (a) "plurality" or "divisibility" in the definition of number, and of (b) "odd" whose definition includes the mention of number. The author's examples for (b) are "pair" and "singularity" whose definitions include the mention of number; another is snubness whose definition includes the mention of the nose. (The latter example of snubness, σιμότης, reminds one of Aristotle's *Met.*, 1030b 28-35 where he says that snubness implies the nose, that is, that snubness is to be defined in terms of, or by reference to, the nose.)

111. It is not certain what Porphyry means by "exceed" περιττεύειν, πλέον ἔχειν translated by Boethius with *abundare*, *plus habet*, and by this Arabic author as well as Avicenna with the word *fadala*: "to exceed," "to be superior to" or "to be more excellent than." Thus, the word here is perhaps a qualitative word: it makes a quality distinction between species and genus. Species is a "more excellent" concept because it is within it that the differentiae

(which exist in potentiality in the genus) exist in actuality. Because of the actual existence of differentiae in the species therefore the latter is more defined or determinate than the genus; it is a "this" (τόδε τί) while the genus, like matter, is indeterminate and a "such" (τοιόνδε). Elias says that "everything that is actual (δυνάμει) is superior (κρεῖττον) to the potential (ἐνεργείᾳ) just as the complete (is superior to) the incomplete."[104] As a complete and definite concept, then, the species is more knowable than the genus. Thus Aristotle says that in defining any individual "we shall make our definition more exact by stating the species than by stating the genus" (*Cat*., 2b 33-34).

Ibn al-Tayyib's solution is confused. While he says that both species and genus are essences, species exceeds genus inasmuch as it (species) is an essencebut the same can be said of the genus because it is also an essence. And one would expect that since the genus is an element in the definition of the species (as he is aware), the former must exceed the latter (species). But it is possible to take Porphyry's "exceed" also to mean to "be more comprehensive than." If this is correct, Ibn al-Tayyib would be right in saying that "genus exceeds species inasmuch as it is (more) general." Avicenna's view is clearer. He says: "Genus exceeds species by reason of universality, since it comprehends things and subjects other than the subjects comprehended by the species. The species exceeds the genus in virtue of the concept (essence), since it (species) includes the concept of the genus with that of the differentia superadded. For just as animal, by universality, includes man and not-man, so man conceptually includes the idea of animality and rationality."[105]

112. That nothing is generated out of nothing was a Greek cosmogonical doctrine: "That nothing comes to be out of that which is not, but everything out of that which is, is a dogma common to nearly all the natural philosophers" (Aristotle, *Met*., 1062b 24-26).

113. We have already demonstrated that, according to Aristotle, differentiae exist actually in the species, and potentially in the genera. See note 1.

114. "Intelligible matter," *hayula 'aqliya*: ὕλη νοητή. The

expression occurs in Aristotle (*Met*., 1036a 9-11, 1036b 34, 1037a 4, 1045a 34). Aristotle generally uses this expression to denote the objects of mathematics: ἡ τῶν μαθηματικῶν ὕλη. Ibn al-Tayyib, however, uses the expression differently here, for he identifies the genus as an intelligible matter. (He has said earlier (e.g., paragraph 6) that the genus resembles matter, and for this see Aristotle's *Met*., 1024b 8, 1038a 6, 1058a 23). "Intelligible matter" here (in contrast to sensible matter) refers to the genus as a universal concept or form thinkable in abstraction from the sensible things in which it inheres. Plotinus also has this concept of the "intelligible matter" (*Enneads* Book 2, chapter 4, sections 4 and 5) but his is different from both Aristotle's and Ibn al-Tayyib's. To Plotinus the "intelligible matter" is that prefigured in the intelligible world for, he reasons, "if there is an intelligible realm beyond of which this world is an image (μίμημα), then, since this world-compound is based on matter, there must be matter there also."

115. Ammonius, p. 103, Elias, p. 86, David, p. 190, Pseudo-Elias, pp. 112-113, all ascribe to Plato the view that differentiae exist in genera in actuality, and to Aristotle the view that they exist in genera in potentiality. One of the Platonists' arguments (which is mentioned here by the author) appears in Ammonius. This is the argument that "in a spiritual sense two contraries would combine in actuality in one and the same thing." In Ammonius we read, "Then, they (the Platonists) say, if there are contraries, it is not absurd that these should exist in the same genus in actuality, since they exist not as in a corporeal substratum but as in something *incorporeal* (or *spiritual*), for the genus is incorporeal; it is possible for contraries to exist in incorporeal things." 106 (Ammonius continues that "if the differentiae are in the genus in potentiality, what is it that causes them to come to exist in the species in actuality, seeing that the potential comes into actuality by means of the actual? For water which is potentially cold becomes hot in actuality by means of fire which is already hot in actuality.")

The question of the existence, actual or potential, of differentiae in the genus is solved differently by Ammonius and Elias. Ammonius says that "the Platonists were speaking about

the genera "before the many"for in the genera 'before the many' differentiae exist in actuality while the Peripatetics (were speaking) about the genera 'in the many.'" [107] Since the Platonic Form (which is the genus "before the many") exists in actuality it follows that whatever (differentia) that may exist in it would exist in actuality. In Aristotle the genus "in the many" (i.e., in the species) contains the differentiae in actuality.

Elias' argument, which has been used by Ibn Sawar, is as follows: "We must know that potentiality is of two kinds: (i) in respect of tendency (or inclination), as the baby with long arms is a potential boxer; or (ii) in respect of an absent actuality (*lit*. actuality 'not yet ready'), as the scholar asleep (is a potential scholar). Actuality is (also) of two kinds: (iii) in respect of habit (or state), as one who is perfect with regard to his knowledge of grammar, although he may not actually be executing it; or (iv) in respect of actualization (or actual exercise), as the scholar (actually) expounding."[108] Elias continues to say that (i) and (iv) are certainly opposed, "for," he asks, "how will the potential which is incomplete ever come to be identical with the actual which is complete?" But, he says, (ii) and (iii) are agreeable and do not seem to be opposed. When, therefore, the Platonists say that the differentiae exist in genera in actuality, they do not mean (iv) but (iii); and when the Aristotelians say that the differentiae exist in the genera in potentiality, they do not mean (i) but (ii). This being soand since there are two kinds of both potentiality and actualityPlato does not differ from Aristotle. In other words, for Elias, (ii) and (iii) are identical.[109]

116. The reference is not traceable in the *De Anima*.

117. The author's objection here seems to be quite legitimate, although his solution is not so judicious. In none of the extant Greek commentaries is such an objection raised. In *Met*., 1038a 25-29 Aristotle says that definition consists of the final differentia which is the form; in 1036a 28 he says that the definition is of the form (as of the universal). In the *De Part. Anim*., 643a 26 he says, "Further, the differentiae must be elements of the essence, and not merely essential attributes." Since the genus is predicated in the category of essence (*Top*., 102a 32), and the differentia also, being generic in char-

acter, should be ranked together with the genus (*Ibid*., 101b 17-18), and the definition, composed of the genus and the differentia, is a phrase signifying a thing's essence (*Ibid*., 101b 38), it would follow that in Aristotle the differentia is predicated in the category of essence. In fact, he says in *Topics*, 153a 17-18 and 154a 26-32 that the differentia is predicated in the category of essence. There is one passage in Aristotle, however, where he contradicts the above conclusion and says, "For no differentia indicates the essence, but rather some quality, such as walking and biped" (*Top*., 122b 16-17). In spite of the view expressed in the latter passage which is nowhere repeated, we would not be wrong if we took Aristotle's doctrine to be that the differentia is predicated in respect of what a thing is (i.e., essence) rather than in respect of what sort a thing is of (i.e., quality).

Puzzled over what the differentia is, Porphyry, in his commentary on the *Categories*, asks whether it is substance (οὐσία) or an accident (συμβεβηκός), and concludes that it is neither of these. But he is then embarrassed by the fact that between substance and accident there is no other thing, for things are either substances or accidents, and if the differentia is neither a substance nor an accident, what would it be? 110 He finds an answer to this question by saying that Aristotle says that the differentia by itself is neither substance nor quality but the whole of it is "a substantial quality" (ποιότης οὐσιώδης: "a quality that participates in substance"). This phrase, however, does not occur in Aristotle, and must be considered to be Porphyry's own understanding of Aristotle's teaching. Having identified the differentia as "substantial quality," Porphyry explains this phrase as follows: "Substantial qualities are the things which complete substances. Things that complete (some things) are those things whose absence destroys the subjects. Those things whose presence or absence would not destroy, would not be substantial, such as the heat of the hot water and of fire . . . for if the heat is taken away the fire is destroyed. *The differentiae are almost like these substantial qualities*. For if rational is taken away from man, he is destroyed . . . wherefore, as completive of the substance, the differentia is

taken along in the definition of the substance; things that are completive of substances are substantial. While accidents do not indicate the substance, a differentia does. What sort of animal man is is indicated by the differentiae. They would, therefore, be substantial qualities." 111

Simply put, what Porphyry is saying is this: "The substantial qualities" (or "qualities that participate in substance") are things that complete substance. These things are not merely the constitutive and most essential elements of a subject, but more importantly, they help to complete (or make whole, συμπληροῦν)the real nature of the subject and, as such, they constitute the copestone, as it were, of the structure of the subject. A privation (στέρησις) of the "substantial quality" (= the differentia) would result in the subject becoming a μὴ ὄν not-being, in the sense of "minus" and not of "zero" (or absolute not-being). To take his own example, hotness is always associated with fire; we cannot conceive of fire which is not hot; hotness, is, thus, a character-predicate of fire. On this showing, the predicate relation that subsists between the subject and the real differentia is that of identity. Porphyry's conception of the differentia in terms of "substantial quality (ποίοτης οὐσιώδης)is interesting, but it shows that the differentia is to be predicated in the category of essence and not (as he thinks) of quality, for, as Ibn al-Tayyib aptly asks (paragraph 226), what would be the difference between the differentia and the accident if both were predicated in the category of quality?

There is a phrase in Avicenna which is quite analogous to Porphyry's "substantial quality." Avicenna says, "The differentia is also predicated of many things in answer to what sort a thing is of (but) in its essence" (*fi dhatihi*).112 The expression in Avicenna can be summed up in the phrase "essential (or substantial) quality." In a passage where he discusses points that are common to both the genus and the differentia, he says: "The second accepted community is that both genus and differentia share in the fact that everything that is predicated of them both (is predicated) in respect of what a thing is" (i.e., in the category of essence).113 But then when he comes to discuss the differences between the genus and differentia

he contradicts himself when he says, "The fourth difference is that differentia is predicated in respect of what sort a thing is of, while the genus is predicated in respect of what a thing is." 114 He repeats the latter view: "The difference (between species and differentia) is that the predication of species is in respect of what a thing is, while the predication of differentia is in respect of what sort a thing is of."115 Thus, Avicenna is not consistent on whether the differentia is predicated in the category of essence or of quality. Yet, it seems that by the time he wrote the '*Topics*'(whichis later than his '*Eisagoge*') he had definitely been convinced that the differentia is predicated in respect of essence. He writes in his *Topics*, "But the genus and the differentia are both predicated in respect of what a thing is*as you know* and it is correct that an answer to a thing's essence should be made by means of them."116

118. *Malaka* translates ἕξις.

119. *Tahayyu'* translates διάθεσις and ἐπιτηδειότης.

120. Strictly speaking only the first three (a-c) are proper instances of conversion. In (c), however, the author's example shows that he has only universal negative (E) proposition in mind: "no A is B" converts simply into "no B is A." But we get another simple conversion in a particular affirmative, (I) proposition: "some A is B" converts simply into "Some B is A."

In (d) if we say that x is a father we mean surely that x has (or had) a son, but we cannot immediately infer that the son too is necessarily a father (conversion involves immediate inference). What the author probably has in mind is an analytic term, a term the denial of whose implied meaning is a contradition. That is, it is contradictory to say that some bachelor is married or that some father has (or had) no son.

In (e) it seems that what is intended by 'proximate cause' (*'illa*: αἴτιον,ground, reason) is the necessary *and* sufficient condition. In this case if event A is the cause of event B, then whenever A occurs we can infer B and whenever B occurs we can infer A. But this is not any kind of conversion, for the concept of conversion is restricted to the realm of propositions. Yet even if we took A and B to be propositions the relation between them would be that of *equivalence* (not

conversion, in which only one proposition or premise is required), given that one is a necessary *and* sufficient condition for the other.

121. In the *Metaphysics*. Book 9, chapter 7, Aristotle distinguishes two senses of potentiality (δύναμις): (a) power and (b) potentiality. (a) means that the source of production or actualization is external, such as the builder (an external agent) uses the matter and actualizes it into a house. In (b), on the other hand, the source of actualization is internal. That is, the subject has a natural ability, i.e., within itself, of metamorphosing into a new state of itself, e.g., seed.

Ibn al-Tayyib's distinction between the two senses of potentiality is a muddle. While his (a) corresponds to the (a) of Aristotle as explained above, he confuses its meaning by saying that "that which disappears with the coming-into-being of something in actuality is a potentiality of the first kind," i.e., (a). But, surely, the wood, brick, etc., which constitute the matter of the house do not disappear with the coming-into-being of the house. The author is aware of this, but then he assigns it to his own sense of potentiality.

The author's explanation of the second sense, i.e., (b), of potentiality is difficult to understand. What he means may be illustrated by the example of the seed. The seed is potentially a plant, but this plant, which is actual, also produces the seed which is potentially a (i.e., another) plant, and so on. It seems this is what he means by "the potentiality which occurs after the disposition from which the action issues." The seed has a natural "disposition" to become the plant, and the plant is the end result of the "action issuing from the disposition." This explanation of the author's statement may be farfetched, but it seems to me to be plausible. If the explanation is correct, however, then the author's second sense of potentiality is identical with Aristotle's second sense, i.e., (b). (The Arabic word translated "disposition" is *tahayyu'* which translates the Greek ἐπιτηδειότης used in the Alexandrian texts.)

122. There is a parallel of this argument in Elias: "Because if the accident is that which may be present or absent without the destruction of the subject, how is it that hectic fever which

is an accident, and naturally hot, does not disappear without the destruction of the subject? For unless it destroys man, it does not disappear." [117] This argument of both Elias and Ibn al-Tayyib is directed against Porphyry's saying (paragraph 257) that the accident may be present or absent without the destruction of the subject in which it inheres. In Porphyry's definition of the accident (which is also Aristotle's, *Top*., 102b 5-8), he uses, as his examples, white, black, sitting, not hectic fever. But even granted that hectic fever is an accident, it may disappear from the body without the destruction of the body, for the body can be cured of hectic fever. (Maybe at the time Elias was writing, i.e., seventh century, A.D., this disease always killed the body it affected?)

123. This negative description of the accident is in Aristotle (*Top*., 102b 4-14), but Aristotle adds that the description is less preferable because it obviously presupposes knowledge of what genus, etc. are. Although Ibn al-Tayyib says that "It is correct that the last one (of the predicables) should be described by the negation of the others," it is more satisfactory for a definition to be made (where possible) in a positive way. With regard to the author's reference to Plato's description of justice as the negation of honesty, it is nonexistent in the *Republic*. The various definitions of justice are right from the first Book all positive, e.g., "justice is honesty"; "justice is helping friends and harming enemies"; "justice is the interest of the stronger"; "justice is doing the business that one is naturally fitted (i.e., mentally) to do." (The last one is what Plato thinks justice really is.) None of these definitions of justice is negative.

124. Another doctrine in the *Eisagoge* which is markedly Porphyrian is the doctrine of the inseparable accident (συμβεβηκὸς ἀχώριστον).a doctrine which was accepted by the Alexandrian, as well as the Arabic scholars but which is criticized by modern logicians as a false doctrine.[118] An accident must be antithetical to the rest of the predicablesgenus, species, proprium, and differentia. For while the other four have a conceptual (necessary) connection with the subject, the accident has no such necessary connection. When we think of the individual man, for instance, we at once conceive of him in the following terms: that he is a man

(species); that he is animal (genus); that he is rational (differentia); and that he is capable of learning grammar (proprium). But that he is pale (accident) is not a necessary or essential attachment to our conception of this individual man.

Now, Porphyry says that blackness is an inseparable accident of the crow or the Ethopian (i.e., black person). But an accident, by definition, must be separable; an inseparable accident seems to be a contradiction in terms. If the blackness of the crow were inseparable then it would be part of the nature of the crow to be black, and, if this were so, blackness would not be an accident. And if blackness is predicated of the species of crows as Porphyry says (paragraph 276 below), then blackness would cease to be an accident: it would become a proprium. [119]

However, Porphyry insists (paragraphs 276, 306), rightly, that accidents generally subsist primarily in individuals and are predicated primarily of individuals and secondarily of the species. The primary subsistence of accidents in individuals seems to follow from the separability and the contingency of accidents. For if the accident were to subsist primarily in species it would be like the proprium; such an accident Aristotle calls relative or temporary, never absolute (*Top*., 102b 25-26), the absolute accident being assumed, perhaps, to subsist in the individual. Moreover, the fact that the accident may or may not be present to its subject implies that it can subsist only in individuals since an attribute of a species is *always* present to that species. This same fact implies also that no accident may be inseparable. Thus, Porphyry's doctrine of the inseparable accident is unsatisfactory.

The source of this doctrine of Porphyry has not as yet been indicated, but I think it could have taken its impulse from Aristotle's doctrine of συμβεβηκὸς κάθ' αὑτό, essential or primary accident (*Met*., 995b 20, 25, 1025a 30-32, *Anal. Post*., 75a 18-22, 75b 2, 83b 19; *Physics*, 193b 27, 203b 34). In *Met*., 1030b 18-25 Aristotle says that it is not by accident that the nose has the attribute either of concavity or snubness, but in virtue of its nature (κάθ' αὑτην). but then, he continues, snubness (or concavity) is not like white when predicated of Callias or man, but like "equal" when at-

tached to quantity, or "male" when attached to animal. Aristotle elsewhere (*Anal. Post*., 84a 12-18) describes such attributes as "snubness," "odd," "equal," etc., as essential "because their subjects inhere in their definition." Thus, Ibn al-Tayyib points out (paragraph 215) that these attributes are, strictly speaking, accidents but they are called essential because "whenever we find them we take their subjects in their definitions."

Now, Aristotle says in *Met*. 1025a 30-32: "Accident has also another meaning, i.e., all that attaches to each thing in virtue of itself (κάθ' αὑτό) but is not in its essence, as having its angles equal to two right angles attached to the triangle. And accidents of this sort may be eternal . . ." In this passage (which actually begins at 1025a 14) Aristotle distinguishes two kinds of accidents, one which is casual and impermanent and another which is permanent or eternal (ἀίδιος). Snubness of the nose must belong to the second kind of accident. It is neither an accident *simpliciter*, nor an essence *simpliciter*: it seems to have the character of both. Thus, Aristotle's συμβεβηκὸς κάθ' αὑτό is an attribute intermediate between essential and accidental attributes.

It seems that what Aristotle calls "essential accident" (Avicenna: *al-'arad al-dhati*, see below) is actually a proprium, [120] for risible may not indicate the essence of man, but it belongs to him permanently (ἀιδίως), just as having its angles equal to two right angles belongs permanently to triangle. Similarly, what Porphyry calls "inseparable accident" is identifiable also with proprium (see footnote 119).

The claim made by S. Afnan (*op. cit*., p. 94) on behalf of Avicenna that the latter rejected Porphyry's doctrine of the inseparable accident (and therefore he was being "modern"), is an extravagant claim which is not supported by Avicenna's own words. In his "*Eisagoge*" (*al-Madkhal, op. cit*.)he accepts this doctrine and speaks also of a concept of the "concomitant accident" (*al-'arad al-lazim*, p. 110). The statement by Avicenna from which Afnan draws his wrong conclusion is: "Do not worry that an accident be inseparable (*mulazim*) or separable (*mufariq*)."[121] There is nothing in this statement which indicates a rejection of the doctrine of the inseparable acci-

dent. Avicenna, in fact, says elsewhere: "Among predicates there are essential, concomitant (i.e., inseparable) accidental, and separable accidental." [122] He also has a concept of the "essential accident" (*al-'arad al-dhatiyy*).[123]Thus, on the basis of his own words, we have to conclude, surely, that Avicenna was among those who accepted Porphyry's doctrine of the inseparable accident.

125. The sentence in Porphyry which gave rise to this criticism is found in paragraph 276 (below) where Porphyry says, "It is common to all of them to be predicated of many, except that genus is predicated of the species and individuals, and the differentia is also predicated in like manner." When Porphyry says that the differentia is predicated "in like manner" (ὡσαύτως).i.e., in the manner of the genus, he means that the differentia is predicated of the species and individuals. But he was wrongly taken to mean that the differentia is also predicated of "many" species. Understanding Porphyry to mean this, Elias argues: "For if the differentia, it is said, is predicated of many, it is common, and no longer a differentia, just as animal belonging to many makes the many common, and not different."[124] Porphyry's commentators here misunderstood him.

126. On the terms univocal and derived (or paronymous) see Aristotle, *Cat*., la 6-15.

127. The view that genus is prior to the species is untenable; that the genus is prior to the species is incorrect if you consider the two historically. Porphyry's argument (paragraph 291), which is also Ibn al-Tayyib's as well as Avicenna's, is this, that if there is species there is genus, but not vice versa. We shall soon see the falsity of this argument.

Aristotle's views on this question are inconsistent. On the one hand he says in the *Top*., 123a 14-15 that genus is by nature prior to species. In the *Cat*., 15a 5-7 he says, "But genera are always prior to species since they (genera) do not reciprocate as to implication of existence; e.g., if there is a fish there is an animal, but if there is an animal there is not necessarily a fish." (This is the argument used by Porphyry and the others.) On the other hand, he says that the genus absolutely does not exist apart from the species (*Met*., 1038a 5-6, and 999d 10),

and that the relation of species to genus is similar to that of parts to the whole (*Ibid*., 1023b 24-25), and parts are prior to the whole (*Top*., 150a 29-35). Let us examine these and other statements and draw some conclusion.

With regard to the view that if there is a species there is a genus (and thus, if there is man there is animal), it follows from the fact that if man is eliminated ox, horse, etc., would continue to constitute the genus, animal. Yet if all the species of animal disappear, there would be no genus animal. Similarly, if all but one of the species are eliminated, there will be no genus, since, as Aristotle points out, a genus cannot consist of only one species (*Top*., 123a 30-33). In other words, for a genus to exist there ought to be more than one species. Therefore, since the genus is destroyed when all the species are destroyed, "and things which are prior to others are *not* destroyed when the others are" (*Met*., 1040a 22), it follows that species are prior to the genera. Also, on this showing, the species are the causes of the existence of the genus, and "that which is in some way the cause of the other's existence might reasonably be called prior by nature" (*Cat*., 14b 12-13). By "prior by nature" Aristotle means "those things which can be without other things, while the others cannot be without thema distinction which Plato used" (Met., 1019a 2).

Aristotle says in the *Categories*, 2b 7, that of the secondary substances the species is more a substance than the genus, since it is nearer to the primary substance. The primary substance is, of course, prior to both species and genus, and the species is nearer to the primary substance; it would follow that the species must be prior to the genus. In the same passage of the *Categories* Aristotle continues to say that "if anyone should render an account of what a primary substance is, he would render a more instructive account, and one more proper to the subject, by stating the species than by stating the genus." (This idea is repeated in 2b 34). When these statements are joined to what Aristotle says in *Met*., 1018b 30 about priority in terms of knowledge, it would follow that the species must be prior to the genus.

It is part of the metaphysic of Aristotle that the form is an actuality, and matter a potentiality; and that the relation of

form to matter is analogous to that of species to the genus; and that actuality is always prior to potentiality; hence, the species must be prior to the genus.

It is on the basis of certain characteristics, such as animate, sensitive, etc., commonly shared by the species man, ox, horse, etc., that we come to conclude that they all belong to the same genus, i.e., animal.

Now, all that this means is this, that if Aristotle were to maintain that the genus is prior to the species which is "closer" to the primary substance, he would be contradicting his notion of the self-existent primary substancefundamental to his philosophyupon which the other categories as well as the secondary substances (genus and species) are dependent. For if the genus is prior to the species, one might expect the species to be prior to the individual (i.e., the primary substance).[125] Were Aristotle to maintain that the genus is prior to the species he would be committed to admitting the Platonic theory of separate Ideas which he so often criticizes in the *Metaphysics*.

Ibn al-Tayyib has discussed this question in paragraph 11. His arguments there are good in parts. His view that the genus is prior to the species because the substratum (i.e., matter) is prior to the form is un-Aristotelian. But he is right in saying that "the species must first be, before the general term (i.e., genus) comprehends them," and therefore species are prior to genera.

Avicenna's view is that genus is prior, for the existence of genus does not necessarily imply the existence of species, and that the destruction of species does not necessarily imply the destruction of the genus.[126] (Ibn al-Tayyib uses this same argument in paragraph 291.) In the early part of this note we have shown that there will be no genus left if all the species disappear; neither will there be a genus made up of one species only.

However, in definition genus is prior to species (*Met*., 1018b 30-33).

128. On the term "primarily" (*'ala al-qasd 'l-awwal*) see my paper referred to in footnote 96.

129. "Form." The word translated "form" is here not the

usual *sura*, but *khilqa*, a word which means "natural disposition," "nature." I have retained the word *khilqa* in the Arabic text in spite of the fact that the British Museum MS. (fol. 155b) has *sura*, not only because *khilqa* is used also in Abu 'Uthman's translation but, more importantly, because I have elsewhere [127] found the Greek word μορφή rendered by the Arabic *khilqa*. Hence my assumption is that *khilqa* was also used, though rarely, to translate the Greek μορφή.

130. In the latter part of the *Topics*, viz., Books 4-7, Aristotle treats the predicables in detail.

131. "While . . . remain." This sentence means that the essences will be lost.

132. "Coexist": The word *tanawaba* means "to alternate," "to occur alternately or successively." The word *tanawaba* is wrongly used here, and the word "coexist," rather than "alternate," used to translate it, is justified by the sense of the passage.

133. See Commentary, sec. 130, above.

Notes

Introduction

1. C. Prantl, *Geschichte der Logik in Abendlande* (Leipzig, 1855), 2: 263 f.

2. See, e.g., L.M. de Rijk, *Logica Modernorum* (Assen, 1962), 1: 18-19.

3. William Kneale, *The Development of Logic* (Oxford, 1962), p. 229.

4. David Knowles, *The Evolution of Medieval Thought* (Baltimore: Helicon Press, 1962), p. 197.

5. Kwame Gyekye, "The Terms 'prima intentio' and 'secunda intentio' in Arabic Logic," *Speculum* 46 (January 1971).

6. I.M. Bochenski, *A History of Formal Logic* (Notre Dame, 1961), p. 150.

7. Nicholas Rescher, *The Development of Arabic Logic* (Pittsburgh: University of Pittsburgh Press, 1964), p. 41, n. 12.

8. See C.A. Qadir, "An Early Islamic Critique of Aristotelian Logic: Ibn Taimiyyah," *International Phil. Quarterly* 8, no. 4 (December 1968): 498-512.

9. Ibid, pp. 503-504.

10. Franz Rosenthal, *Knowledge Triumphant* (Leiden: E.J. Brill, 1970), p. 205.

11. For some knowledge of the logical theories of the philosophical theologians, see Josef Van Ess, "The Logical Structure in Islamic Theology," in G.E. von Grunebaum, ed., *Logic in Classical Islamic Culture* (Wiesbaden, 1970).

12. Nicholas Rescher, *Al-Farabi's Commentary on Aristotle's Prior Analytics* (Pittsburgh, 1963).

13. Al-Ghazali, *Maqasid al-falasifa*, ed. Suleiman Dunya (Cairo, 1960), pp. 35-36. The Latin translation of the above passage runs as follows: "De utilitate logicae: Postquam autem manifestum est, quod ignotum non potest sciri nisi per notum. . . . Scientia vero logicae dat regulam qua discernitur, an definitio et syllogismus sint vitiosa, an non; ad hoc ut descernatur scientia vera a non vera. Et haec est quasi pondus et mensura ad omnes scientias. In eo autem quod non ponderatur pondere, non cogniscitur augmentum vel diminutio, lucrum vel damnum. C. H. Lohr, S.J.,

"Logica Algazelis," *Traditio* 21 (1965): 241.

14. D.M. Dunlop, "Al-Farabi's Introductory *Risalah* on Logic," *Islamic Quarterly* 3, no. 4 (1957): 232-233.

15. Al-Farabi, *Ihsa' al-'ulum*, ed. Osman Amine, 3d ed. (Cairo, 1968), p. 67.

16. Avicenna, *Al-'ilahiyat*, ed. S. Dunya et al. (Cairo, 1960), p. 10. The Latin translation of this passage was as follows: "Subiectum vero logicae, sicut scisti, sunt intentiones intellectae secundo, quae apponuntur intentionibus primo intellectis, secundum quod per eas pervenitur de cognito ad incognitum." See Prantl, *Geschichte der Logik*, p. 328 (n.) and William Kneale, *Development of Logic*, p. 230.

17. Avicenna, *al-Najat* (Cairo, 1938), p. 3.

18. See para. 36 of the translation, infra.

19. Qadir, *Early Islamic Critique*, p. 503.

20. For some detailed knowledge of this interesting debate, see Muhsin Mahdi, "Language and Logic in Classical Islam," in *Logic in Classical Islamic Culture*, ed. G.E. von Grunebaum (Wiesbaden, 1970), pp. 51-83.

21. Dunlop, "Al-Farabi's Introductory *Risalah*," p. 233.

22. Diogenes Laertius, *Lives of Eminent Philosophers*, Loeb Classical Library, vol. 2, 7, 41, 43.

23. Ibid., sec. 44.

24. J. Bidez, *Vie de Porphyrios* (Leipzig, 1913), pp. 51 ff.

25. Ibn al-Qifti, *Ta'rikh al-Hukama'*, ed. J. Lippert (1903), p. 257.

26. A. Busse, *Ammonius In Porphyrii Isagogen* (1891), p. 22.
χρήσιμον δὲ ἐστι τὸ βιβλίον εἰς πᾶσαν φιλοσοφιαν . . . εἰ γὰρ τὰς
'Αριστοτέλους κατηγορίας εἰσαγει. αἳ περὶ τῶν 'απλῶν φωνῶν, αὗται δὲ τῆςλογικῆς εἰσιν ἀρχαί, δῆλον ὅτι πρῶτον ἐστι τῇ τάξει τῆς λογικῆς.

27. See Richard I. Aaron, *The Theory of Universals*, 2d ed. (Oxford, 1967), ch. 1, "Porphyry's Problem."

28. See Kwame Gyekye, "An Examination of the Bundle-Theory of Substance," *Philosophy and Phenomenological Research* 34, no. 1 (September 1973).

29. Ibn Abi 'Usaibi'a, *'Uyun al-'Anba' fi Tabaqat al-'Atibba*,' ed. Muller, (1884), p. 105; M. Steinschneider, *al-Farabi: Des Arabischen Philosophen Leben und Schriften* (St. Petersburg, 1869 rpt.; Amsterdam, 1966), p. 157, A. Baumstark, *Aristoteles bei den Syrern* (Leipzig, 1900), pp. 170-171.

30. Khalil Georr, *Les Catégories d'Aristote dans leurs versions Syro-Arabes* (Beyrouth, 1948), p. 203.

31. A. Busse, *Die neuplatonischen Ausleger der Isagoge des Porphyrius* (Berlin, 1892), p. 5.

32. The ascription of this commentary to Elias has been questioned by L.G. Westerink in his article "Elias on the Prior Analytics," *Mnemosyne* 14 (1961): 126-139; for "the commentary on Porphyry's Eisagoge is anonymous in the manuscripts.... There is a good explanation for the ascription to David. . . ." (p. 127). A. Busse who edited Elias' commentary, was not unaware of this. See his *Die neuplatonischen Ausleger*, p. 7.

33. This is edited by L.G. Westerink (Amsterdam: North-Holland Publishing Co., 1967). Westerink writes in the Preface: "The text published here for the first time, a modest supplement to the *Commentaria in Aristotelem Graeca*, is closely connected, both in content and in the manuscript tradition, with the commentaries of Elias (C.A.G., XVIII.I) and David

(C.A.G. XVIII.2)."

34. H. Usener, *De Stephano Alexandrino* (Bonn, 1873), p. 5.

35. Paul Tannery, "Sur la période finale de la philosophie grecque," *Revue Philosophique* 42 (1896), p. 178.

36. Baumstark, *Aristoteles*, pp. 187, 189, 210.

37. *Die Arabischen Übersetzungen aus dem Griechischen* (Leipzig, 1889; rpt. Graz, 1960).

38. Baumstark, *Aristoteles*, pp. 170-171.

39. Ibid., pp. 171, 210.

40. M. Steinschneider, *Al-Farabi*, p. 126; J.G. Wenrich, *De Auctorum Graecorum Versionibus et Commentariis Syriacis, Arabicis, etc*. (Leipzig, 1842), pp. 285-286. (See n. 49 below).

41. Ahmad Fuad al-Ahwani in his edition of 'Uthman's translation of the *Eisagoge* (Cairo, 1952), p. 46.

42. R. Duval, *La littérature syriaque* (Paris, 1907).

43. Ibn Abi Usaibi *'a.'Uyun al-Anba'*, p. 323. Elias was, here, referred to as "Alianos al-Iskandarani" (Elias the Alexandrian). On the right margin of Fol. 44a of the MS. of Ibn al-Tayyib's commentary the word ἐλληνος is written in Greek letters against the name of Alianos (Elias). In that line he, i.e., Elias, is mentioned together with John Phioponus, Olympiodorus "and all the Alexandrian scholars." Since the name of Olympiodorus is also written in Greek (see p. 29 below) it would seem that the Greek letters represented an attempt to write the name Elias also in Greek. However, Dr. R. Walzer in his *Greek into Arabic*, 2nd impression, London, 1963), p. 69, does not think that "Alianos = Elias." Prof. Franz Rosenthal has recently identified Alianos with one Apollonius of Alexandria, who is little known. But his arguments cannot be conclusive. We do not know, for instance, when this Apollonius lived, whether before or after Porphyry. (F. Rosenthal, "A Commentator of Aristotle" in *Islamic Philosophy and Classical Tradition*, ed. S.M. Stern et al. (Oxford, 1972), p. 338 ff. However, it is my belief that since some peculiar views reported by Ibn al-Tayyib in the name of Alianos have been found in the works of Elias (see secs. 88, 109, and 124 in the Commentary), it is quite probable that Alianos = Elias.

44. Baumstark, *Aristoteles*, p. 133.

45. Ibid., p. xii.

46. Ibid., pp. 139-140; R. Duval, *Littérature syriaque*, p. 247.

47. Baumstark, *Aristoteles*, pp. 139 ff. De Lacy O'Leary, *How Greek Science Passed to the Arabs* (1964), p. 52.

48. Ernest Renan, "Lettre à M. Reinaud, sur quelques manuscrits syriaques du Musée Britannique." *Journal Asiatique* 19 (1852): 321; R. Duval, *Littérature syriaque*, p. 248: W. Wright, *A Short History of Syriac Literature* (London, 1894), p. 90; G. Sarton, *An Introduction of the History of Science*, 1:423.

49. J.G. Wenrich *De Auctore*, p. 286 says: Praefationi huic tanta similitudo cum Ammonii in Porphyrii isagogen praefatione, ut nullum dubium sit, illam ex hac esse depromtam." W. Wright, *op. cit*., p. 252. Constantin Sauter,"Die peripatetische Philosophie bei den Syrern und Arabern," *Archiv*

für Geschichte der Philosophie (1904), pp. 516-533. The last source says that Athanasius' Syriac translation was made in 645 (p. 524).

50. This was edited by Ahmad Fuad al-Ahwani (Cairo, 1952), and by 'Abd al-Rahman Badawi, *Mantiq Aristu* (Cairo, 1952), 3: 1021-1068.

51. Al-Ahwani's edition, p. 46.

52. Ibid. More about these people below.

53. De Lacy O'Leary, *How Greek Science Passed to the Arabs*, (London, 1949) p. 170.

54. Khalil Georr, *Les Catégories d'Aristote*, p. 194.

55. al-Ahwani, loc. cit.

56. Al-Ahwani, p. 49.

57. Philip Hitti Catalogue, no. 814.

58. This figure was obtained by counting the names of the commentators listed in Nicholas Rescher, *The Development of Arabic Logic* (Pittsburgh, 1964), a very useful bibliographical source; other names not mentioned by Rescher can be found on pp. 49-50 of Al-Ahwani, op. cit.

59. al-Qifti, op. cit., p. 220.

60. By M. Steinschneider, Übersetzungen, op. cit., p. 98.

61. Ibn al-Nadim, *Fihrist*, ed. Gustav Flügel, p. 341 (1929 edition).

62. al-Qifti, *Tarikh al-Hukama'*, p. 256.

63. See p. 17 above.

64. See n. 49 above.

65. The following account of the Arabic work on the *Eisagoge* is based on Nicholas Rescher, *Arabic Logic*; M. Steinschneider, *Ubersetzungen*, pp. 98-99. J.G. Wenrich, *De Auctorum*, p. 285.

66. Some of his views on the subject matter of the *Eisagoge* are referred to by his pupil Ibn Suwar. See al-Ahwani's edition of the *Eisagoge*, (Cairo, 1952), pp. 95 ff.

67. In the MS. of the Bibliothèque Nationale, MS. Heb. 917.

68. Ibn al-Qifti, op. cit., p. 362. This was mentioned by neither Wenrich, Steinschneider, nor Rescher.

69. Ed. by G. van Vloten (1895).

70. Ibn al-Qifti, op. cit. p. 233.

71. Ibn Abi Usaibi'a, op. cit., pp. 239-241.

72. S.M. Stern, "Ibn al-Tayyib's Commentary on the Isagoge," *Bulletin of the School of Oriental and African Studies* 19, p. 425.

73. Ibn Abi Usaibi'a, loc. cit. It is mentioned also in Steinschneider, *Übersetzungen*, op. cit., p. 99, and Brockelmann, *GAL* 1: 635, and Suppl. 1,884.

74. S.M. Stern: op. cit., pp. 419 ff.

75. See p. 25 above (E).

76. I would like here to record my gratitude to Professor D. M. Dunlop of Columbia University for lending me his clearer photocopy of the Escorial MS. 612 as well as that of the Bodleian Marsh 28.

77. R. Walzer, op. cit., p. 110. Footnote Ad. p. 92.

78. S.M. Stern, op cit., p. 422, plus n. 2.

79. See n. 43 above.

Commentary

1. A.C. Lloyd: "Neoplatonic Logic and Aristotelian Logic," *Phronesis*. Vol. 1. No. 2, May 1955, p. 156: repeated by the same author in *The Cambridge History of Later Greek and Early Medieval Philosophy*. ed. A.H. Armstrong, (Cambridge, 1967), p. 322.

2. Ammonius: *In Porphyrii Isagogen*. ed. A. Busse. p. 22. For the Greek see note 26 in the Introduction.

3. E.A. Moody: *The Logic of William of Ockham*, (New York, 1935), pp. 68, 71.

4. *Ibid*., p. 76.

5. W.D. Ross: *Aristotle* (University Paperbacks), p. 57.

6. William and Martha Kneale: *The Development of Logic*. (Oxford, 1962), p. 187.

7. H.W.B. Joseph: *An Introduction to Logic*. 2nd ed., Oxford, 1916), pp. 66-67.

8. See my paper: "Aristotle and a Modern Notion of Predication." *Notre Dame Journal of Formal Logic*. October, 1974.

9. See para. 137 (Porphyry's section).

10. Ammonius: *In Porphyrii Isagogen*, ed. A. Busse, (Berlin, 1891), p. 119 lines 2-3: Εἴρηται γὰρ ἤδη κατὰ τοὺς Περιπατητικοὺς ὅτι αἱ διαφοραὶ δυνάμει εἰσὶν ἐν τοῖς γένεσι πρότεραι τῶν ὑπ' αὐτὰ εἰδῶν (See also pp. 102-103); Elias: *In Prophyrii Isagogen*, ed. A. Busse, (Berlin, 1890), p. 86.

11. I say "remotely" because the "immediate" elements of the definition are the genus and the differentia, but, as has been set out, the species is absolutely indispensable in the generation, i.e. in actuality, of these two immediate elements.

12. Al-Farabi: *Risala fi 'l- 'Aql*; ed. M. Bouyges, S.J., (Beyrouth, 1938), pp. 5, 7 & 10 = Al-Farabi's *Philosophische Abhandlungen*, ed. F. Dieterici, (Leiden, E.J. Brill, 1890), pp. 39, 40, 41.

13. E. Gilson: Le texte medièval du *De Intellectu d'Alfarabi Archives d'Histoire Doctrinale et Litteraire du Moyen Age*. 1929, pp. 115-126.

14. A.M. Goichon, *Lexique de la langue philosophique d'lbn Sina* (Avicenna), (Paris, 1938), p. 391.

15. Unless otherwise stated, the references to Ammonius, Elias, David and Pseudo-Elias are references to their extant commentaries on the *Eisagoge* mentioned in the Introduction. "93.18" means "P. 93 line 18."

16. Ibn Sina: *Eisagoge*, (al-Madkhal) ed. I. Madkour, (Cairo, 1371/1952).

17. Al-Farabi's *Eisagoge*. ed. D.M. Dunlop. *Islamic Quarterly*, vol. 3. 1956, pp. 117-138.

18. L.G. Westerink: *Damascius, Lectures on the Philebus*, Amsterdam, 1959, p. 51:
ὅτι προηγουμένως μὲν περὶ διαιρετικῆς καὶ ἀναλυτικῆς διαλέγεται, ἤδη δὲ καὶ περὶ ὅλης τῆς διαλεκτικῆς ἧς αἱ δὲ μέθοδοι.

19. Elias p. 37; also Ammonius p. 35, David p. 88.

20. Ammonius p. 36: also David pp. 89 & 103.

21. MS. of the *Categories*. Fol. 10b.

22. *Ibid*., Fol. 11a.

23. *Ibid*., Fol. 14a (repeated on 14b).

24. H. Diels: *Doxographi Graeci*, (Berlin and Leipzig, 1929), p. 386. The statement occurs also in pseudo-Plutarch, *Placita Philosophorum* which was translated by Qusta Ibn Luqa (d. c. 912) and ed. by A. Badawi, (Cairo, 1954), p. 157:
Πυθαγόρας ἀριθμὸν ἑαυτὸν κινοῦντα. τὸν δ'ἀριθμὸν ἀντὶ τοῦ νοῦπαραλαμβάνεται

25. J. Burnet: *Early Greek Philosophy*. 3rd edition, pp. 294ff: W.D. Ross, *De Anima*, (Oxford, 1961), p. 195.

26. H. Diels, l*oc. cit:* Πλάτων οὐσίαν νοητήν ἐξ ἑαυῆς κινητήν, κατ' ἀριθμὸνἐναρμόνιον κινουμένην.

27. David, p. 93. χρυσαόριόν τινα ὕπατον 'Ρώμης πολιτικοῖς ἐνασχολούμενονπράγμασιν.'

28. Pseudo-Elias. p. 63; also David, p. 97.

29. David p. 90: ἡ δὲ ὁριστικὴ προτερεύει τῆς ἀποδεικτικῆς ἐπειδή ὥς φησινὁ 'Αριστοτέλης ἀρχὴ ἀποδείξεως ὁ ὁρισμός ἐστιν.

30. In his commentary on the *Categories* the author writes: "Aristotle has made it clear in the *Posterior Analytics* that it is not for the practitioner of the logical art to speak of the existence of its subject matter and the principles (*mabadi'*) of his subject matter. Since the subject matter of the logical art consists of the incomplex significatory terms, Aristotle formally assumed the existence of these terms." (Fol. 14a; the same idea is repeated on Fol. 16b.)

31. Ammonius. p. 40:
ὁ τοίνυν 'Αντισθένης ἔλεγε τὰ γένη καὶ τὰ εἴδη ἐνψιλαῖς ἐπινοίαις εἶναι λέγων ὅτι "ἵππον μὲν ὁρῶ ἱππότητα δὲ οὐχ ὁρῶ καὶ πάλιν ἄνθρωπον μὲν ὁρῶ ἀνθρωπότητα δὲ οὐχ ὁρῶ."
(The statement is also in Elias, p. 47; Pseudo-Elias, p. 66; David, p. 109.)

32. Elias p. 47:
ἀλλ' ὦ 'Αντίσθενες φησὶ πρὸς αὐτὸν ὁ Πλάτων οἷς μὲνὁρᾶται ἵππος καὶ ἄνθρωπος τὰ κατὰ μέρος ἔχεις τουτ' ἔστιν ὀφθαλμούς οἷς δὲ ὁρᾶται ἀνθρωπότης καὶ ἱππότης τὰ καθόλου οὐκ ἔχεις νοῦν γὰρ οὐκ ἔχεις.
Both this and the previous statements are found also in Simplicus, *In Categorias*, p. 208.

33. Victor Goldschmidt: *Essai sur le 'Cratyle*" (Paris, 1940), p. 18.

34. Epictetus, *Diss. 1*, 17:12: ἀρχη παιδευσέως ἡ τῶν ὀνοματῶν ἐπίσκεψις.

35. E. Zeller: *Socrates and the Socratic Schools*, tr. by O.J. Reichel, (London, 1868), p. 253.

36. G.C. Field: *Plato and his Contemporaries*, 3rd ed. (London: Methuen, 1967), p. 167.

37. Elias p. 47: οἱ γὰρ Στωϊκοὶ σώματα εἶναι ἔλεγον τὰ καθόλου.

38. οἱ ἀπο Ζήνωνος Στωϊκοὶ ἐννοήματα ἡμέτερα τὰς ἰδέας εἶναι ἔφασαν. Aetius, *Plac*. and Plut. *Epit*. quoted in H. Diels, *op. cit*., pp. 309, 615.

39. Elias p. 48: τὰ πρὸ τῶν πολλῶν ἐστιν ἐν τῷ δημιουργῷ πρὸ πολλῶν δὲ ἐστι τὸ ἐν τη γνωσει τοῦ θεοῦ ὑπαρχον.

Also Ammonius, pp. 41-42, 44, Pseudo-Elias, pp. 68-69. Ibn Sina, *al-Madkhal*. p. 69: fi *'ilm allah*

40. In *Timaeus*, 37c the Ideas are called gods, but this does not mean that they were created by the gods. On the question of the relation of the Ideas to God (or gods) see: R.M. Jones: "The Ideas as the Thoughts of God," *Classical Philology*. 1926, pp. 317 ff: C.J. de Vogel: "Neoplatonic Character of Platonism and Platonic Character of Neoplationism." *Mind*, Jan. 1953. pp. 59 ff. H.A. Wolfson: "Extradeical and Intradeical Interpretations of Platonic Ideas," *Journal of the History of Ideas*. vol. 22. 1961. pp. 3 ff. Reprinted in his *Religious Philosophy, A Group of Essays* (Harvard Univ. Press, 1961), pp. 2 ff.

41. Ammonius, pp. 68-69, (also pp. 104-105):
Εἴρηται ὅτι τριττά ἐστι τὰ γένη τὰ μὲν πρὸ τῶν πολλῶν τὰ δὲ ἐν τοῖς πολλοῖς τὰ δὲ ἐπὶ τοῖς πολλοῖς. Also Elias, p. 48.

42. I. Madkour: *L'Organon d'Aristote dans le monde arabe* (Paris 1934), p. 151: also C. Prantl, *Geschichte der Logik*, vol. 2. 1885. p. 313.

43. Ibn al-Qifti: *op. cit*., p. 362

44. Ibn Sina: al-Madkhal, *op. cit*., p. 65. For some detailed discussion of Ibn Sina's conception of universals see I. Madkhour, *op. cit*., pp. 148-155. Ammonius calls the genus "before the many" the "intelligible (νοητόν) genus" (*In Categorias*, ed. A. Busse, p. 41). the genus "in the many" sensible or natural genus" (*loc. cit.; In Isagogen*. p. 119: thus, Ammonius' designation of the genus "in the many" as natural (γένος φυσικόν) or sensible (γένος αἰσθητόν) agrees with Yahya's: and the genus "after the many" intellectual (logical) genus (γένος ἐννοηματικόν) *In Cat. p*. 9, *In Isagogen*. p. 69. *fi 'ilm allah*.

45. On Plato's use of "power" (δύναμις) see F.M. Cornford. *Plato's Theory of Knowledge*. pp. 234-239.

46. H.A. Wolfson, *Philo*, vol. I, Third Printing (Harvard University Press), pp. 217 ff.

47. Ammonius. p. 46:
τὸ δὲ τῶν περιπατητικῶν ὄνομα ἐκ τοιαύτης γέγονεν αἰτίας φασὶν ὅτι ὁ θεῖος Πλάτων ἐν Ἀκαδημίᾳ βαδίζων ἐποιεῖτο τὰς πρὸς τοὺς ἑταίρους συνουσίας διὰ τὸ σῶμα ἐπιτήδειον ποιεῖν διὰ τῶν γυμνασιῶν πρὸς ψυχῆς ἔλλαμψιν.

48. For the various senses of *wahm*, see e.g., H.A. Wolfson: "Internal Senses." *Harvard Theol. Rev*., vol. 28, 1935. pp. 69 ff: A.M. Goichon. *Lexique*. under *Wahm*: D.B. MacDonald. "*Wahm* in Arabic and its Cognates," *Journal of the Royal Asiatic Society*, 1922, pp. 505ff.

49. Ammonius. pp. 39-40:

τῶν ὄντων τὰ μὲν ὑφέστηκε, τὰ δὲ ἐν ψιλαῖς ἐπινοίαις ὑπάρχει οἷον ἱπποκένταυρος τραγέλαφος ἅτινα ἐπινοούμενα μὲν ὑφίσταται, μὴ ἐπινοούμενα δὲ οὐχ ὑφίσταται ἀλλα παυσαμενης τῆς ἐπινοίας αὐτὰ συμπαύεται. Elias. p. 49: David, p. 119.

50. On Anaxagoras doctrine of homoeomerity see F.M. Cornford. "Anaxagoras' Theory of Matter,'" *Classical Quarterly*, 1930, pp. 14 ff. A.L. Peck: "Anaxagoras and the Parts," *Classical Quarterly*, 1926, pp. 57 ff: "Anaxagoras, Predication, and Physics," *Ibid*., 1931. pp. 27 ff and pp. 112 ff.

51. C.F. de Vogel: *Greek Philosophy. A Collection of Texts (E.J.* Brill, 1950), vol. I, p. 153.

52. *Moralia*, 1012d.

53. *In Arist. Top*., p. 162, Wallies.

54. *In De Anima*, M. Hayduck, p. 165.

55. Simplicius. In *Arist. De Anima*, Hayduck, p. 30.

56. References to Plutarch and Stobaeus can be found in H. Diels. *Doxographi Graeci* (Berlin and Leipzig, 1929), p. 386: περὶ ψυχῆς Πυθαγόρας ἀριθμὸν ἑαυτὸν κινοῦντα.

57. Ammonius, indeed, recognizes this fact when he says: "It is possible to discuss genera and species (i.e., universals) met*aphysically*, when we ask whether or not God has in himself the models of both genera and species: and whether there is truth in Plato's opinion that the Ideas are self-existing objects of thought which he calls real and primary substances. or not. as Aristotle opines." Δυνατὸν οὖν ἐστι περὶ τῶν γενῶν τε καὶ εἰδῶν καὶ θεολογικῶς μὲν διαλέγεσθαι ὁπόταν ζητῶμεν ὅτι ἄρα ὁ θεὸς ἔχει ἐν ἑαυτῷ τῶν γενῶν τε καὶ εἰδῶν τὰ ἐκτυπώματα ἢ οὐκ ἔχει ἄρα ἀληθής ἐστιν ἡ Πλάτωνος δόξα ὅτι αἱ ἰδέαι εἰσὶν νοηταὶ αὐταὶ καθ' ἑαυτὰς ὑφεστῶσαι ἃς καὶ ὄντως οὐσίας καὶ πρώτας οὐσίας καλεῖ ἢ οὔ ὡς καὶ Ἀριστοτέλει δοκεῖ. Also David, 120, 20 ff.

58. Ammonius. p. 50: ἰστέον δὲ ὅτι ἡ σχέσις λέγεται ἢ κατὰ τέχνην ὡς τοῦ διδασκάλου πρὸς τὸν μαθητὴν ἢ κατὰ τύχην ὡς τοῦ δεσπότου πρὸς τὸν δοῦλον ἢ κατὰ προαίρεσιν ὡς τοῦ φίλου πρὸς τὸν φίλον ἢ κατὰ φύσιν ὡς τοῦ πατρὸς πρὸς τὸν υἱόν. Also Pseudo-Elias, p. 74: David, pp. 129-130.

59. Elias, p. 53: οὕτως γὰρ καὶ αὐτὰ ὁ Πλάτων ἐκάλεσε τὴν μὲν ἑκάστου ὕπαρξιν οὐσίαν τὴν δὲ κοινωνίαν ταυτότητα τὴν δὲ διαφορὰν ἑτερότητα τὴν ἐνέργειαν κίνησιν την ἀνάπαυλαν αὐτῶν στάσιν.

60. Elias, p. 52: ποῦ γὰρ ταχθήσεται τὰ παρὰ τοῖς γραμματικοῖς τριγένη ἀρσενικόν θηλυκόν οὐδέτερον. Also David, p. 125; Pseudo-Elias, p. 73.

61. For a detailed philological and semantical account of Is*tithna'*. see my paper "The term *Istithna'* in Arabic logic," *Journal of the American Oriental Society*, vol. 92. no. 1, Jan-March, 1972, pp. 88-92.

62. For the Arabic text, see Kwame Gyekye, *Ibn al-Tayyib's Commentary on Porphyry's "Eisagoge*." Arabic text edited with Introduction and a Glossary of Greek-Arabic Logical Terms (Beirut, 1975), para. 16. (Ibn Sina, *al-Madkhal*, pp. 48-49, makes a similar distinction between definition and description.)

63. P.F. Strawson, *Individuals* (New York: Anchor Books, 1963), pp. 174-175.

64. P.T. Geach: "Subject and Predicate," *Mind*, 1950, p. 463: repeated in his *Reference and Generality*, (Cornell U.P., 1962), p. 42.

65. E.g., E. Moody, *op. cit*., p. 16. says the "sixth predicable" (i.e., individual) "is not found in Porphyry" although he is aware (p. 73) that Porphyry says that an individual can be predicated.

66. *Ibid*., p. 16.

67. This work of al-Farabi was edited by Mlle. Mubáhat Türker in *Revue de la Faculté des Langues d'Histoire et de Geographie d l'Université d'Ankara*, vol. 16, 1958, The ref. is p. 247. 4-6.

68. *Die Abhandlungen der Ichwan es-Safa,* ed. F. Dieterici (Leipzig, 1886), p. 349. (I.e

69. *Mafatih al-'ulum*, ed. G. Van Volten (Leiden: E.J. Brill, 1895), p. 141.

70. David, p. 169: τὸ ἄτομον λέγεται πολλαχῶς ἔστι γὰρ ἀδιαίρετονἄτομον ὥσπερ τὸ νῦν καὶ τὸ σημεῖον . . . ἄτομον δὲ καὶ τὸ δυσδιαίρετον ὥσπερ ὁ ἀδάμας καὶ τὰ ὅμοια ἔστι δὲ ἄτομον καὶ ὁ Σωκράτης καὶ'Αλκιβιάδης οὐχ ὅτι οὐ πέφυκε τέμνεσθαι (τέμνεται γὰρ εἰς σῶμα καὶ

71. Ibn Sina: *al-Madkhal,* p. 53.

72. Euripidis, *Trageodiae Fragmenta*, vol. 3, A. Nauck (Leipzig, 1885), p. 4.

73. Elias, p. 58: οὐδέποτε γὰρ ἐν ἀποδόσει ὁρισμοῦ κέχρηται τῃ ὑπαλλήλῳ ἤτοι διαλλήλῳ δείξει . . . οὐδὲ γὰρ ὡς εἴρηται ἐν ὁρισμῷ εἰώθασιν οἱ

74. Pseudo-Elias, p. 80.

75. *Al-Madkhal*, p. 51.

76. David, p. 154:
ὡς οὐσιά εἰς συμβεβηκότα οἷον ὁ ἄνθρωπος εἰς ἄνδρακαὶ γυναῖκα (ταῦτα γὰρ οὐδὲν διαφέρει κατὰ τὴν οὐσίαν ἀλλὰ κατὰ τὰ συμβεβηκότα φημὶ δὲ κατὰ τὰ ἐξέχοντα μόρια οὕτω γὰρ καὶ ὁ Γαληνός φησιν ὅτι οὐδὲν

77. C.E. Kuhn, *Galen's Opera*. vol. IV, p. 158:
πάντ' οὖν ὅσα τοῖςἀνδράσιν ὑπάρχει μόρια. ταῦτα κἀν ταῖς γυναιξὶν ἰδεῖν ἐστιν. ἐν ἑνι μόνῳ τῇ κότα φημὶ δὲ κατὰ τὰ ἐξέχοντα μόρια οὕτω γὰρ καὶ ὁ Γαληνός φησιν ὅτι οὐδὲν

78. Ibn Sina: *Ibid*., p. 64.

79. Ammonius, p. 81.

80. Elias, pp. 67-68. The same are listed in David, p. 154.

81. Pseudo-Elias. p. 92.

82. *Platonis Opera*, ed. Jacob Hunziker & Fr. Dubneri, vol. 3. Firmin-Didot (Paris 187
Διαίρεσις μὲν τοίνυν ἐστιν ἡ μὲν γένους εἰς εἴδητομή ἡ δὲ ὅλου εἰς μέρη ἡ δὲ φωνῆς τομὴ εἰς σημαινόμενα . . . ἡ δὲσυμβεβηκότων εἰς ὑποκείμενα . . . ἡ δὲ ὑποκειμένων εἰς συμβεβηκότα.

83. Stephanus: *In Comm. De Interp.,* ed. M. Hayduck. 1885 (C.A.G. vol. 18, pt. 3), p.
οὕτως γὰρ καὶ ὁ Πορφύριος ἐν ταις Εἰσαγωγαῖς εἶπεντὸ ὂν ὁμωνύμως κατηγορεῖσθαι καίπερ ἀποδεδειγμένον ὅτι τὸ ὂν οὐ κατηγορεῖται ὁμωνύμως ἐπειδὴ ἔστιν ἐν αὐτῷ τὸ πρότερον καὶ τὸ ὕστερον

84. *Alexandri Scripta Minora*, ed. 1. Bruns (1892), p. 23. 9.

85. Al-Farabi's *Philosophiche Abhadlungen* ed. F. Dieterici, 1890, p. 88. Note that *al-'i* edition must be amended to read *al-'ism al-mushakkik.* Dieterici himself translates it w which means "ambiguous." (Dieterici. German Tr., p. 145.)

86. Ibn Sina, *Al-Shifa', La Logique*, 2, *Les Catégories*, ed. G. Anawati et al. (Cairo, 19

87. Elias, p. 70: διαιρεῖται τοίνυν τὸ ὂν οὐχ ὡς ὁμώνυμος φωνή (ὥσπερ

ἐν Κατηγορίαις Ἀριστοτέλης καὶ νῦν ὁ Πορφύριος εἴρηκεν), οὐδὲ ὡς γένος εἰς εἴδη ὥσπερ ὁ Πλάτων εἶπεν, ἀλλ' ὡς τὰ ἀφ' ἑνός καὶ πρὸς ἕν.

88. The fact that Ibn al-Tayyib's reference to Elias is correct strengthens my conviction
Alianos is identifiable with that of Elias (see Introduction, footnote 43).

89. *Alexander in Met*., ed. M. Hayduck. (1891), p. 241.

90. Pseudo-Elias. p. 93:
λείπεται οὖν ὡς τὰ ἀφ' ἑνός καὶ πρὸς ἕν τὸ ὂν διαιρεῖται ὥσπερ γὰρ ἐκ τῆς ἰατρικῆς ἰατρικὸν βιβλίον λέγομεν καὶ ἰατρικὸν σμιλίον οὕτως ἐκ τοῦ ὄντος οὐσία και ποσὸν καὶ ποιὸν καὶ τὰ λοιπὰ γένη.

91. Commentary on the *Categories*, Fol. 15b.

92. This example is taken from al-Ghazali's *Maqasid al-Falasifa* (Cairo, 1960), p. 11.

93. J. Stenzel: *Plato's Method of Dialectic*, p. 159.

94. J. Tricot: *Isagoge, traduction et notes* (Paris, 1947), p. 21, footnote 2.

95. L. Elders: "Platonic Theory of Principles of Being," in *Aristotle on Dialectic, The T*
G.E.L. Owen (Oxford, 1968), p. 131, footnote 1.

96. See my paper: "The Terms 'Prima Intentio' and 'Secunda Intentio' in Arabic Logic,"
Journal of Medieval Studies, vol. 46, Jan. 1971, pp. 32-38.

97. Elias, p. 73: οὐ δεῖ ὑπερβάθμιον πόδα τείνειν καὶ ἀπὸ τῶν γενικωτάτων ἔρχεσθαι ἐπὶ τὰ εἰδικώτατα ὑπερβαίνοντα τὰ μέσα.

98. Elias, p. 37.

99. Elias, p. 77: μέση γὰρ τούτων ἡ διαφορὰ ὡς τὸ μὲν γένος διαιροῦσα τὸ δὲ εἶδος συμπληροῦσα.

100. C.E. Kuhn. vol. XVI. p. 423:
σημαίνει γοῦν (ἡ φύσις) τὴν πρώτην οὐσίαν ὑποβεβλημένην ἅπασι τοῖς γεννητοῖς καὶ φθαρτοῖς σώμασιν ὅθεν ἔνιοι τῶν παλαιῶν φιλοσόφων παρανομασθέντες ἐκλήθησαν φυσικοί.

101. *Galen On the Natural Faculties*, tr. by Arthur J. Brock. Loeb Classical Library, p.

102. Pseudo-Elias, p. 101.

103. Avicenna: *Livre des definitions*. edité, traduit et annoté par A.M. Goichon, Publica
L'lnstitut Francais d'Archeologie Orientale du Caire, 1963, p. 18 (Arabic), p. 28 (Frencl

104. Elias, p. 84: πᾶν ἐνεργείᾳ κρεῖττον τοῦ δυνάμει ὡς τέλειον ἀτελοῦς.

105. Ibn Sina, *al-Madkhal*, p. 99.

106. Ammonius, p. 103:
ἔπειτα δέ φασιν εἰ καὶ ἐναντία ἐστίν οὐδὲν ἄτοπον εἶναι αὐτὰ ἐν τῷ γένει αὐτῷ ἐνεργείᾳ ἐπειδὴ οὐχ ὡς ἐν ὑποκειμένῳ εἰσὶ σώματι ἀλλ' ἐν τινι ἀσωμάτῳ (ἀσώματον γὰρ τὸ γένος) δύνανται δὲ ἐν

107. Ammonius, p. 104:
οἱ μὲν Πλατωνικοὶ περὶ τῶν πρὸ τῶν πολλῶν ἔλεγον (ἐν γὰρ τοῖς πρὸ τῶν πολλῶν γένεσιν ἐνεργείᾳ ὑπάρχουσιν αἱ διαφοραί)... οἱ δὲ Περιπατητικοὶ περὶ τῶν ἐν τοῖς πολ

108. Elias, p. 86:

δεῖ δὲ εἰδέναι ὅτι τὸ δυνάμει διττόν ἢ κατ' ἐπιτηδειότητα. ὡς ἐπὶ τοῦ βρέφους τοῦ μακρά κῶλα ἔχοντος καὶ λεγουμένου δυνάμει πύκτου ἢ κατ' ἐνέργειαν μὴ παροῦσαν ὡς ἐπὶ τοῦ καθεύδοντος γραμματικοῦ καὶ

τὸ ἐνεργειᾳ διττόν. ἢ καθ' ἕξιν, ὡς ἐπὶ τοῦ τελείου μὲν κατὰ τὴν γραμματικήν,μὴ ἐνεργοῦντος δὲ κατ' αὐτήν κατὰ προχείρισιν. ὡς ἐπὶ του ἐξηγουμενοῦ

109. Ibn Suwar, who uses this argument, correctly ascribes it to Alianos (Elias). See al-

110. *Porphyrii Isagoge et in Aristotelis Categorias Commentarium*, ed. Busse (1887),

111. *Porphy. Isag. Loc. cit.*:
Οὐσιώδεις εἰσιν ποιότητες αἱ συμπληρωτικαὶτῶν οὐσιῶν συμπληρωτικὰ δὲ εἰσιν ἐκεῖνα ἅτινα ἀπογινόμενα φθείρει τὰ ὑποκείμενα ἃ δὲ γινόμενα καὶ ἀπογινόμενα οὐ φθείρει οὐκ ἂν εἴη οὐσιώδη οἷον ἡ

112. Ibn Sina, *al-Madkhal*, p. 76.

113. *Ibid*., p. 92.

114. *Ibid*., p. 94.

115. *Ibid*., p. 103.

116. Ibn Sina: *Al-Shifa, La Logique 6, al-Jadal*: ed. by A.F. El-Ehwhany (Cairo, 1965)

117. Elias, p. 92: ὅτι εἰ συμβεβηκός ἐστιν ὃ γίνεται καὶ ἀπογίνεται χωρὶςφθορᾶς τοῦ ὑποκειμένου πῶς ὁ ἑκτικὸς πυρετὸς συμβεβηκὸς ὢν (θερμασία

118. See, e.g., L.S. Stebbing, *A Modern Introduction to Logic* (New York: Harper Torc

119. It seems that what Porphyry means by "inseparable accident" is. in fact, a propriu
Tehran, No. 623, p. 11.

120. W.D. Ross, *Aristotle's Metaphysics*, vol. 1. p. 349. also recognized that the "essent

121. Ibn Sina: *al-Najat* (Cairo, 1948), p. 10.

122. Ibn Sina: *al-Tanbihat*. op. cit. p. 4.

123. See under *'arad*, pp. 216-220 of Goichon's *Lexique, op. cit*.

124. Elias, p. 87: εἰ γὰρ ἡ διαφορά φασί κατὰ πλειόνων κοινωνία

ἐστὶ καὶ οὐκέτι διαφορά ὥσπερ τὸ ζῷον πολλοῖς ὑπάρχον κοινωνίαν αὐτῶνποιεῖ καὶ οὐ διαφοράν.
(Cf. *De Part. Anim*. 643a 11-13). (Incidentally, this objection of Elias is referred to by Ibn Suwar in the name, correctly, of Elias (Alianos): Ibn Suwar in *al-Ahwani, op. cit*., p. 110.

125. As a matter of fact there is one sentence in Porphyry's *Eisagoge* (paragraph 306) which reads: "As for the genera and species they are by nature prior to individuals." This sentence, which exists nowhere else in the *Eisagoge*. is contradictory to Aristotle's notion of the primary substance in the *Categories*, and is contradicted by Porphyry's own discussion of the primary substance in his Commentary on the *Categories* (op. cit., p. 89) where he says. "Primary substances are the individuals, because they are said to be prior (or first). while the others (i.e., the other categories) are secondary: πρώτως μὲν γὰρ οὐσίαι αἱ ἄτομοι. ὅτι καὶ πρῶται λέγονται αἱ δὲἄλλαι δεύτεραι.

126. Ibn Sina: al-*Madkhal,* p. 98.

127. E.g., *The Arabic Translation of Aristotle's Physics*, ed. 'Abd al-Rahman Badawi (Cairo, 1964), vol. 1, p. 288 = Aristotle's *Physics* 210a, and *p*. 309 = *Physics* 211b.

Glossary of Arabic-Greek Logical Terms

mu'allaf (+ min)	συγκειμένος
ta'līf	συμπλοκή
anniyya	τὸ εἶναι
mabda'	ἀρχή
burhān	ἀπόδειξις
burhan al-daur	διαλλήλος δεῖξις (circular demonstration)
basīṭ	ἁπλοῦς
bāṭil	ψεῦδος
bayyin	δῆλος
taba 'a	ἕπομαι, ἀκολουθέω
istathnā	προστίθημι (to add, assume as an additional premise, add as an additional assumption)
istithnā'	πρόσθεσις πρόσληψις (additional assumption)
juz'ī	καθ' ἕκαστον κατὰ μέρος
jins	γένος
jauhar	οὐσία
jauharī	οὐσιώδης
yajūz an	ἐνδέχεται
ḥujja	δεῖξις
ḥadd	ὅρος, ὁρισμός
ḥass	αἴσθησις
maḥsūs	αἰσθητός
ghair muḥaṣṣal	ἀόριστος
muḥaṣṣal	ὡρισμένος
ḥaqq	ἀληθής
'alā al-ḥaqīqa bi-ma'nā 'alā al-taḥqīq	κυρίως (strictly, properly, precisely)
ḥukm	ἀπόφανσις ἀποφαντικὸς λόγος (statement, proposition, declaration)
taḥlīl	ἀνάλυσις
ḥumila (+ 'alā)	φέρεσθαι (+ κατά) καταγορεῖσθαι (+ κατά)
maḥmūl	κατηγορία, κατηγορούμενον
muḥāl	ἀδυνατόν, ἄτοπον
ḥawā	περιέχω
min ḥaithu (= bi-mā huwa)	ᾗ (qua, insofar as)

khāṣṣa	ἴδιον
dakhīl	οὐσιώδης
dalla	δηλόω, σημαίνω
dallala, dalīl	σημεῖον
dhāt (= shay')	τί
dhāt	τὸ τί ἐστι
li-dhātihi, bi-dhātihi, fī dhātihi	καθ' αὑτό
mursal	ἁπλοῦς
rasm	ὑπογραφή
rafa'a	ἀναιρέω
tarkīb	σύνθεσις
murakkab	συγκειμένος, σύνθετος, συμπεπλεγμένος
sabab	αἴτιον
salb	ἀπόφασις
tasallama	λαμβάνω (assume)
bi-'l-sawīya	ἐπίσης
musāwī	ἴσος
mushābiha	ὁμοιότης
shakhṣ	καθ' ἕκαστον, ἄτομον
ishtaraka	μετέχω
ishtirāk	κοινωνία
shakk	ἀπορία (objection, puzzle)
shani'	ἄτοπος (absurd)
mā al-shay'	τὸ τί ἦν εἶναι (τί ἐστι)
mā huwa shay'	τὸ τί ἦν εἶναι
ṣūra	εἶδος, μορφή
ṣidq	τὸ ἀληθές
mutaḍādd	ἐναντίος (contrary)
ḍarūrī	ἀναγκαῖος
muḍāf	πρός τι
maṭ lūb	ζητούμενον
'alā al-'l-iṭ lāq	ἁπλῶς
'adam	στέρησις
araḍ	ἐπουσιώδης, συμβεβηκός
bi-'l-'araḍ	κατὰ συμβεβηκός
'āmm	κοινός

ma'nā	νόημα
ma'nā (= shay', amr)	πρᾶγμα
al-ma'ānī al-maujūda	τὰ ὄντα
dalla 'alā ma'nā mā	σημαίνω τί
ghairīya	ἑτερότης
'illa	αἴτιον
faṣl	διαφορά
bi-'l-fi'l	ἐνεργείᾳ
qābil	δεκτικός
mutaqābil	ἀντικειμένος
aqdam	πρότερον
qisma	διαίρεσις
'alā al-qaṣd al-awwal	προηγουμένως
istiqrā'	ἐπαγωγή
qaḍīya	πρότασις
qaul	λόγος; ὁρισμός
maqūl	κατηγορία, λέγομενον
yuqāl (+ 'alā)	κατηγορεῖται, λέγεται κατά
quwwa	δύναμις
bi-'l-quwwa	δύναμει
qiyās	συλλογισμός
kāfa' fī al-ḥaml }	ἀντικατηγορεῖσθαι (reciprocate, be convertible with)
kadhb	ψεῦδος
kullī	τὸ καθόλου
yalzamu	συμβαίνει (it follows)
lāzim	ἀκολουθήσις
laḥaqa	ἕπομαι, ἀκολουθέω
'alā hādha al-mithāl	ὁμοίως
mumkin	δυνατός
mumtani'	ἀδύνατος
māhiyya	τὸ τί ἦν εἶναι
nisba	σχέσις
mutanāqiḍ	ἀντιφατικός (contradictory)
naẓar	σκέψις, θεωρία
nafy	ἀπόφασις
ghair nihāya	ἄπειρος
min ṭarīq mā huwa	ἐν τῷ τί ἔστιν
min ṭarīq ayyu shay' huwa	ἐν τῷ ποῖον τί ἔστιν
wajaba	ἀναγκαῖον εἶναι
ījāb	κατάφασις
wujida	εἶναι, ὑπάρχω

wujida (+ li)	*ὑπάρχω* (+ dat.) to be predicated of, belong to, apply to
maujūd	*τὸ ὄν*
wujūd	*τὸ εἶναι*
ʿadam al-wujūd	*τὸ μή εἶναι*
mauḍūʿ	*ὑποκείμενον*
mutawassiṭ	*μέσος*
bi-ʾl-tawāṭiʾ	*συνωνύμως*
bi-ʾittifāq ʾl-ism	*ὁμωνύμως*
wahm	*ὑπόληψις, ἐπίνοια*

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